



PT-37

Plasmarc Cutting Torches



Instruction Manual

P/N 0558004860 - PT-37 Torch with rack 4.5' (1.4 m)
P/N 0558004861 - PT-37 Torch with rack 17' (5.2 m)
P/N 0558004862 - PT-37 Torch with rack 25' (7.6 m)
P/N 0558004863 - PT-37 Torch with rack 50' (15.2 m)
P/N 0558004894 - PT-37 Torch w/o rack 4.5' (1.4 m)
P/N 0558004895 - PT-37 Torch w/o rack 17' (5.2 m)
P/N 0558004896 - PT-37 Torch w/o rack 25' (7.6 m)
P/N 0558004897 - PT-37 Torch w/o rack 50' (15.2 m)

**BE SURE THIS INFORMATION REACHES THE OPERATOR.
YOU CAN GET EXTRA COPIES THROUGH YOUR SUPPLIER.**

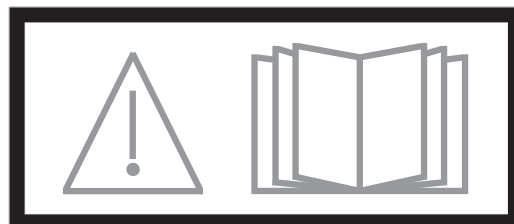
CAUTION

These INSTRUCTIONS are for experienced operators. If you are not fully familiar with the principles of operation and safe practices for arc welding and cutting equipment, we urge you to read our booklet, "Precautions and Safe Practices for Arc Welding, Cutting, and Gouging," Form 52-529. Do NOT permit untrained persons to install, operate, or maintain this equipment. Do NOT attempt to install or operate this equipment until you have read and fully understand these instructions. If you do not fully understand these instructions, contact your supplier for further information. Be sure to read the Safety Precautions before installing or operating this equipment.

USER RESPONSIBILITY

This equipment will perform in conformity with the description thereof contained in this manual and accompanying labels and/or inserts when installed, operated, maintained and repaired in accordance with the instructions provided. This equipment must be checked periodically. Malfunctioning or poorly maintained equipment should not be used. Parts that are broken, missing, worn, distorted or contaminated should be replaced immediately. Should such repair or replacement become necessary, the manufacturer recommends that a telephone or written request for service advice be made to the Authorized Distributor from whom it was purchased.

This equipment or any of its parts should not be altered without the prior written approval of the manufacturer. The user of this equipment shall have the sole responsibility for any malfunction which results from improper use, faulty maintenance, damage, improper repair or alteration by anyone other than the manufacturer or a service facility designated by the manufacturer.



READ AND UNDERSTAND THE INSTRUCTION MANUAL BEFORE INSTALLING OR OPERATING.

PROTECT YOURSELF AND OTHERS!

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1.0 Safety Precautions



WARNING: These Safety Precautions are for your protection. They summarize precautionary information from the references listed in Additional Safety Information section. Before performing any installation or operating procedures, be sure to read and follow the safety precautions listed below as well as all other manuals, material safety data sheets, labels, etc. Failure to observe Safety Precautions can result in injury or death.



PROTECT YOURSELF AND OTHERS -- Some welding, cutting, and gouging processes are noisy and require ear protection. The arc, like the sun, emits ultraviolet (UV) and other radiation and can injure skin and eyes. Hot metal can cause burns. Training in the proper use of the processes and equipment is essential to prevent accidents. Therefore:

1. Always wear safety glasses with side shields in any work area, even if welding helmets, face shields, and goggles are also required.
2. Use a face shield fitted with the correct filter and cover plates to protect your eyes, face, neck, and ears from sparks and rays of the arc when operating or observing operations. Warn bystanders not to watch the arc and not to expose themselves to the rays of the electric-arc or hot metal.
3. Wear flameproof gauntlet type gloves, heavy long-sleeve shirt, cuffless trousers, high-topped shoes, and a welding helmet or cap for hair protection, to protect against arc rays and hot sparks or hot metal. A flameproof apron may also be desirable as protection against radiated heat and sparks.
4. Hot sparks or metal can lodge in rolled up sleeves, trouser cuffs, or pockets. Sleeves and collars should be kept buttoned, and open pockets eliminated from the front of clothing.
5. Protect other personnel from arc rays and hot sparks with a suitable non-flammable partition or curtains.
6. Use goggles over safety glasses when chipping slag or grinding. Chipped slag may be hot and can fly far. Bystanders should also wear goggles over safety glasses.

1.1 Safety - English



FIRES AND EXPLOSIONS -- Heat from flames and arcs can start fires. Hot slag or sparks can also cause fires and explosions. Therefore:

1. Remove all combustible materials well away from the work area or cover the materials with a protective non-flammable covering. Combustible materials include wood, cloth, sawdust, liquid and gas fuels, solvents, paints and coatings, paper, etc.
2. Hot sparks or hot metal can fall through cracks or crevices in floors or wall openings and cause a hidden smoldering fire or fires on the floor below. Make certain that such openings are protected from hot sparks and metal."
3. Do not weld, cut or perform other hot work until the workpiece has been completely cleaned so that there are no substances on the workpiece which might produce flammable or toxic vapors. Do not do hot work on closed containers. They may explode.
4. Have fire extinguishing equipment handy for instant use, such as a garden hose, water pail, sand bucket, or portable fire extinguisher. Be sure you are trained in its use.
5. Do not use equipment beyond its ratings. For example, overloaded welding cable can overheat and create a fire hazard.
6. After completing operations, inspect the work area to make certain there are no hot sparks or hot metal which could cause a later fire. Use fire watchers when necessary.
7. For additional information, refer to NFPA Standard 51B, "Fire Prevention in Use of Cutting and Welding Processes", available from the National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.



ELECTRICAL SHOCK -- Contact with live electrical parts and ground can cause severe injury or death. DO NOT use AC welding current in damp areas, if movement is confined, or if there is danger of falling.

1. Be sure the power source frame (chassis) is connected to the ground system of the input power.
2. Connect the workpiece to a good electrical ground.
3. Connect the work cable to the workpiece. A poor or missing connection can expose you or others to a fatal shock.
4. Use well-maintained equipment. Replace worn or damaged cables.
5. Keep everything dry, including clothing, work area, cables, torch/Piston, and power source.
6. Make sure that all parts of your body are insulated from work and from ground.
7. Do not stand directly on metal or the earth while working in tight quarters or a damp area; stand on dry boards or an insulating platform and wear rubber-soled shoes.
8. Put on dry, hole-free gloves before turning on the power.
9. Turn off the power before removing your gloves.
10. Refer to ANSI/ASC Standard Z49.1 (listed on next page) for specific grounding recommendations. Do not mistake the work lead for a ground cable.

ELECTRIC AND MAGNETIC FIELDS — May be dangerous. Electric current flowing through any conductor causes localized Electric and Magnetic Fields (EMF). Welding and cutting current creates EMF around welding cables and welding machines. Therefore:

1. Welders having pacemakers should consult their physician before welding. EMF may interfere with some pacemakers.
2. Exposure to EMF may have other health effects which are unknown.

3. Welders should use the following procedures to minimize exposure to EMF:

- A. Route the electrode and work cables together. Secure them with tape when possible.
- B. Never coil the torch or work cable around your body.
- C. Do not place your body between the torch and work cables. Route cables on the same side of your body.
- D. Connect the work cable to the workpiece as close as possible to the area being welded.
- E. Keep welding power source and cables as far away from your body as possible.

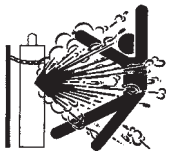


FUMES AND GASES -- Fumes and gases, can cause discomfort or harm, particularly in confined spaces. Do not breathe fumes and gases. Shielding gases can cause asphyxiation.

Therefore:

1. Always provide adequate ventilation in the work area by natural or mechanical means. Do not weld, cut, or gouge on materials such as galvanized steel, stainless steel, copper, zinc, lead, beryllium, or cadmium unless positive mechanical ventilation is provided. Do not breathe fumes from these materials.
2. Do not operate near degreasing and spraying operations. The heat or arc rays can react with chlorinated hydrocarbon vapors to form phosgene, a highly toxic gas, and other irritant gases.
3. If you develop momentary eye, nose, or throat irritation while operating, this is an indication that ventilation is not adequate. Stop work and take necessary steps to improve ventilation in the work area. Do not continue to operate if physical discomfort persists.
4. Refer to ANSI/ASC Standard Z49.1 (see listing below) for specific ventilation recommendations.

- 5. WARNING:** This product, when used for welding or cutting, produces fumes or gases which contain chemicals known to the State of California to cause birth defects and, in some cases, cancer. (California Health & Safety Code §25249.5 et seq.)



CYLINDER HANDLING -- Cylinders, if mishandled, can rupture and violently release gas. Sudden rupture of cylinder, valve, or relief device can injure or kill. Therefore:

1. Use the proper gas for the process and use the proper pressure reducing regulator designed to operate from the compressed gas cylinder. Do not use adaptors. Maintain hoses and fittings in good condition. Follow manufacturer's operating instructions for mounting regulator to a compressed gas cylinder.
2. Always secure cylinders in an upright position by chain or strap to suitable hand trucks, undercarriages, benches, walls, post, or racks. Never secure cylinders to work tables or fixtures where they may become part of an electrical circuit.
3. When not in use, keep cylinder valves closed. Have valve protection cap in place if regulator is not connected. Secure and move cylinders by using suitable hand trucks. Avoid rough handling of cylinders.
4. Locate cylinders away from heat, sparks, and flames. Never strike an arc on a cylinder.
5. For additional information, refer to CGA Standard P-1, "Precautions for Safe Handling of Compressed Gases in Cylinders", which is available from Compressed Gas Association, 1235 Jefferson Davis Highway, Arlington, VA 22202.



EQUIPMENT MAINTENANCE -- Faulty or improperly maintained equipment can cause injury or death. Therefore:

1. Always have qualified personnel perform the installation, troubleshooting, and maintenance work. Do not perform any electrical work unless you are qualified to perform such work.
2. Before performing any maintenance work inside a power source, disconnect the power source from the incoming electrical power.
3. Maintain cables, grounding wire, connections, power cord, and power supply in safe working order. Do not operate any equipment in faulty condition.
4. Do not abuse any equipment or accessories. Keep equipment away from heat sources such as furnaces, wet conditions such as water puddles, oil or grease, corrosive atmospheres and inclement weather.
5. Keep all safety devices and cabinet covers in position and in good repair.
6. Use equipment only for its intended purpose. Do not modify it in any manner.



ADDITIONAL SAFETY INFORMATION -- For more information on safe practices for electric arc welding and cutting equipment, ask your supplier for a copy of "Precautions and Safe Practices for Arc Welding, Cutting and Gouging", Form 52-529.

The following publications, which are available from the American Welding Society, 550 N.W. LeJuene Road, Miami, FL 33126, are recommended to you:

1. ANSI/ASC Z49.1 - "Safety in Welding and Cutting"
2. AWS C5.1 - "Recommended Practices for Plasma Arc Welding"
3. AWS C5.2 - "Recommended Practices for Plasma Arc Cutting"
4. AWS C5.3 - "Recommended Practices for Air Carbon Arc Gouging and Cutting"

5. AWS C5.5 - "Recommended Practices for Gas Tungsten Arc Welding"
6. AWS C5.6 - "Recommended Practices for Gas Metal Arc Welding"
7. AWS SP - "Safe Practices" - Reprint, Welding Handbook.
8. ANSI/AWS F4.1, "Recommended Safe Practices for Welding and Cutting of Containers That Have Held Hazardous Substances."



MEANING OF SYMBOLS - As used throughout this manual: Means Attention! Be Alert! Your safety is involved.



Means immediate hazards which, if not avoided, will result in immediate, serious personal injury or loss of life.



Means potential hazards which could result in personal injury or loss of life.



Means hazards which could result in minor personal injury.

1.2 La seguridad - español



ADVERTENCIA: Estas Precauciones de Seguridad son para su protección. Ellas hacen resumen de información proveniente de las referencias listadas en la sección "Información Adicional Sobre La Seguridad". Antes de hacer cualquier instalación o procedimiento de operación, asegúrese de leer y seguir las precauciones de seguridad listadas a continuación así como también todo manual, hoja de datos de seguridad del material, calcomanías, etc. El no observar las Precauciones de Seguridad puede resultar en daño a la persona o muerte.



PROTEJASE USTED Y A LOS DEMÁS-- Algunos procesos de soldadura, corte y ranurado son ruidosos y requieren protección para los oídos. El arco, como el sol, emite rayos ultravioleta (UV) y otras radiaciones que pueden dañar la piel y los ojos. El metal caliente causa quemaduras. EL entrenamiento en el uso propio de los equipos y sus procesos es esencial para prevenir accidentes. Por lo tanto:

1. Utilice gafas de seguridad con protección a los lados siempre que esté en el área de trabajo, aún cuando esté usando careta de soldar, protector para su cara u otro tipo de protección.
2. Use una careta que tenga el filtro correcto y lente para proteger sus ojos, cara, cuello, y oídos de las chispas y rayos del arco cuando se esté operando y observando las operaciones. Alerta a todas las personas cercanas de no mirar el arco y no exponerse a los rayos del arco eléctrico o el metal fundido.
3. Use guantes de cuero a prueba de fuego, camisa pesada de mangas largas, pantalón de ruedo liso, zapato alto al tobillo, y careta de soldar con capucha para el pelo, para proteger el cuerpo de los rayos y chispas calientes provenientes del metal fundido. En ocasiones un delantal a prueba de fuego es necesario para protegerse del calor radiado y las chispas.
4. Chispas y partículas de metal caliente puede alojarse en las mangas enrolladas de la camisa, el ruedo del pantalón o los bolsillos. Mangas y cuellos deberán mantenerse abotonados, bolsillos al frente de la camisa deberán ser cerrados o eliminados.
5. Proteja a otras personas de los rayos del arco y chispas calientes con una cortina adecuada no-flamable como división.
6. Use careta protectora además de sus gafas de seguridad cuando esté removiendo escoria o puliendo.

La escoria puede estar caliente y desprenderse con velocidad. Personas cercanas deberán usar gafas de seguridad y careta protectora.



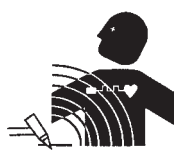
FUEGO Y EXPLOSIONES -- El calor de las flamas y el arco pueden ocasionar fuegos. Escoria caliente y las chispas pueden causar fuegos y explosiones. Por lo tanto:

1. Remueva todo material combustible lejos del área de trabajo o cubra los materiales con una cobija a prueba de fuego. Materiales combustibles incluyen madera, ropa, líquidos y gases flamables, solventes, pinturas, papel, etc.
2. Chispas y partículas de metal pueden introducirse en las grietas y agujeros de pisos y paredes causando fuegos escondidos en otros niveles o espacios. Asegúrese de que toda grieta y agujero esté cubierto para proteger lugares adyacentes contra fuegos.
3. No corte, suelde o haga cualquier otro trabajo relacionado hasta que la pieza de trabajo esté totalmente limpia y libre de sustancias que puedan producir gases inflamables o vapores tóxicos. No trabaje dentro o fuera de contenedores o tanques cerrados. Estos pueden explotar si contienen vapores inflamables.
4. Tenga siempre a la mano equipo extintor de fuego para uso instantáneo, como por ejemplo una manguera con agua, cubeta con agua, cubeta con arena, o extintor portátil. Asegúrese que usted esta entrenado para su uso.
5. No use el equipo fuera de su rango de operación. Por ejemplo, el calor causado por cable sobrecarga en los cables de soldar pueden ocasionar un fuego.
6. Después de terminar la operación del equipo, inspeccione el área de trabajo para cerciorarse de que las chispas o metal caliente ocasionen un fuego más tarde. Tenga personal asignado para vigilar si es necesario.
7. Para información adicional, haga referencia a la publicación NFPA Standard 51B, "Fire Prevention in Use of Cutting and Welding Processes", disponible a través de la National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.



CHOQUE ELECTRICO -- El contacto con las partes eléctricas energizadas y tierra puede causar daño severo o muerte. NO use soldadura de corriente alterna (AC) en áreas húmedas, de movimiento confinado en lugares estrechos o si hay posibilidad de caer al suelo.

1. Asegúrese de que el chasis de la fuente de poder esté conectado a tierra a través del sistema de electricidad primario.
2. Conecte la pieza de trabajo a un buen sistema de tierra física.
3. Conecte el cable de retorno a la pieza de trabajo. Cables y conductores expuestos o con malas conexiones pueden exponer al operador u otras personas a un choque eléctrico fatal.
4. Use el equipo solamente si está en buenas condiciones. Reemplace cables rotos, dañados o con conductores expuestos.
5. Mantenga todo seco, incluyendo su ropa, el área de trabajo, los cables, antorchas, pinza del electrodo, y la fuente de poder.
6. Asegúrese que todas las partes de su cuerpo están insuladas de ambos, la pieza de trabajo y tierra.
7. No se pare directamente sobre metal o tierra mientras trabaja en lugares estrechos o áreas húmedas; trabaje sobre un pedazo de madera seco o una plataforma insulada y use zapatos con suela de goma.
8. Use guantes secos y sin agujeros antes de energizar el equipo.
9. Apague el equipo antes de quitarse sus guantes.
10. Use como referencia la publicación ANSI/ASC Standard Z49.1 (listado en la próxima página) para recomendaciones específicas de como conectar el equipo a tierra. No confunda el cable de soldar a la pieza de trabajo con el cable a tierra.



CAMPOS ELECTRICOS Y MAGNETICOS - Son peligrosos. La corriente eléctrica fluye a través de cualquier conductor causando a nivel local Campos Eléctricos y Magnéticos (EMF). Las corrientes en el área de corte y soldadura, crean EMF alrededor de los cables de soldar y las máquinas. Por lo tanto:

1. Soldadores u Operadores que use marca-pasos para el corazón deberán consultar a su médico antes de soldar. El Campo Electromagnético (EMF) puede interferir con algunos marca-pasos.
2. Exponerse a campos electromagnéticos (EMF) puede causar otros efectos de salud aún desconocidos.

3. Los soldadores deberán usar los siguientes procedimientos para minimizar exponerse al EMF:

- A. Mantenga el electrodo y el cable a la pieza de trabajo juntos, hasta llegar a la pieza que usted quiere soldar. Asegúrelos uno junto al otro con cinta adhesiva cuando sea posible.
- B. Nunca envuelva los cables de soldar alrededor de su cuerpo.
- C. Nunca ubique su cuerpo entre la antorcha y el cable, a la pieza de trabajo. Mantenga los cables a un sólo lado de su cuerpo.
- D. Conecte el cable de trabajo a la pieza de trabajo lo más cercano posible al área de la soldadura.
- E. Mantenga la fuente de poder y los cables de soldar lo más lejos posible de su cuerpo.



HUMO Y GASES -- El humo y los gases, pueden causar malestar o daño, particularmente en espacios sin ventilación. No inhale el humo o gases. El gas de protección puede causar falta de oxígeno.

Por lo tanto:

1. Siempre provea ventilación adecuada en el área de trabajo por medio natural o mecánico. No solde, corte, o ranure materiales con hierro galvanizado, acero inoxidable, cobre, zinc, plomo, berilio, o cadmio a menos que provea ventilación mecánica positiva. No respire los gases producidos por estos materiales.
2. No opere cerca de lugares donde se aplique sustancias químicas en aerosol. El calor de los rayos del arco pueden reaccionar con los vapores de hidrocarburo clorinado para formar un fosfógeno, o gas tóxico, y otros irritantes.
3. Si momentáneamente desarrolla irritación de ojos, nariz o garganta mientras está operando, es indicación de que la ventilación no es apropiada. Pare de trabajar y tome las medidas necesarias para mejorar la ventilación en el área de trabajo. No continúe operando si el malestar físico persiste.
4. Haga referencia a la publicación ANSI/ASC Standard Z49.1 (Vea la lista a continuación) para recomendaciones específicas en la ventilación.

- 5. ADVERTENCIA-- Este producto cuando se utiliza para soldaduras o cortes, produce humos o gases, los cuales contienen químicos conocidos por el Estado de California de causar defectos en el nacimiento, o en algunos casos, Cancer. (California Health & Safety Code §25249.5 et seq.)**



MANEJO DE CILINDROS-- Los cilindros, si no son manejados correctamente, pueden romperse y liberar violentamente gases. Rotura repentina del cilindro, válvula, o válvula de escape puede causar daño o muerte. Por lo tanto:

1. Utilice el gas apropiado para el proceso y utilice un regulador diseñado para operar y reducir la presión del cilindro de gas. No utilice adaptadores. Mantenga las mangueras y las conexiones en buenas condiciones. Observe las instrucciones de operación del fabricante para montar el regulador en el cilindro de gas comprimido.
2. Asegure siempre los cilindros en posición vertical y amárrelos con una correa o cadena adecuada para asegurar el cilindro al carro, transportes, tablleros, paredes, postes, o armazón. Nunca asegure los cilindros a la mesa de trabajo o las piezas que son parte del circuito de soldadura. Este puede ser parte del circuito eléctrico.
3. Cuando el cilindro no está en uso, mantenga la válvula del cilindro cerrada. Ponga el capote de protección sobre la válvula si el regulador no está conectado. Asegure y mueva los cilindros utilizando un carro o transporte adecuado. Evite el manejo brusco de los
1. Siempre tenga personal cualificado para efectuar la instalación, diagnóstico, y mantenimiento del equipo. No ejecute ningún trabajo eléctrico a menos que usted esté cualificado para hacer el trabajo.
2. Antes de dar mantenimiento en el interior de la fuente de poder, desconecte la fuente de poder del suministro de electricidad primaria.
3. Mantenga los cables, cable a tierra, conexiones, cable primario, y cualquier otra fuente de poder en buen estado operacional. No opere ningún equipo en malas condiciones.
4. No abuse del equipo y sus accesorios. Mantenga el equipo lejos de cosas que generen calor como hornos, también lugares húmedos como charcos de agua, aceite o grasa, atmósferas corrosivas y las inclemencias del tiempo.
5. Mantenga todos los artículos de seguridad y coberturas del equipo en su posición y en buenas condiciones.
6. Use el equipo sólo para el propósito que fue diseñado. No modifique el equipo en ninguna manera.

INFORMACION ADICIONAL DE SEGURIDAD -- Para más información sobre las prácticas de seguridad de los equipos de arco eléctrico para soldar y cortar, pregunte a su proveedor por una copia de "Precautions and Safe Practices for Arc Welding, Cutting and Gouging-Form 52-529."



Las siguientes publicaciones, disponibles a través de la American Welding Society, 550 N.W. LeJuene Road, Miami, FL 33126, son recomendadas para usted:

1. ANSI/ASC Z49.1 - "Safety in Welding and Cutting"
2. AWS C5.1 - "Recommended Practices for Plasma Arc Welding"
3. AWS C5.2 - "Recommended Practices for Plasma Arc Cutting"
4. AWS C5.3 - "Recommended Practices for Air Carbon Arc Gouging and Cutting"



MANTENIMIENTO DEL EQUIPO -- Equipo defectuoso o mal mantenido puede causar daño o muerte. Por lo tanto:



SIGNIFICADO DE LOS SIMBOLOS

--Según usted avanza en la lectura de este folleto: Los Símbolos Significan ¡Atención! ¡Esté Alerta! Se trata de su seguridad.



Significa riesgo inmediato que, de no ser evadido, puede resultar inmediatamente en serio daño personal o la muerte.



Significa el riesgo de un peligro potencial que puede resultar en serio daño personal o la muerte.



Significa el posible riesgo que puede resultar en menores daños a la persona.

1.3 La sûreté - français



AVERTISSEMENT : Ces règles de sécurité ont pour but d'assurer votre protection. Ils récapitulent les informations de précaution provenant des références dans la section des Informations de sécurité supplémentaires. Avant de procéder à l'installation ou d'utiliser l'unité, assurez-vous de lire et de suivre les précautions de sécurité ci-dessous, dans les manuels, les fiches d'information sur la sécurité du matériel et sur les étiquettes, etc. Tout défaut d'observer ces précautions de sécurité peut entraîner des blessures graves ou mortelles.



PROTÉGEZ-VOUS -- Les processus de soudage, de coupe et de gougeage produisent un niveau de bruit élevé et exigent l'emploi d'une protection auditive. L'arc, tout comme le soleil, émet des rayons ultraviolets en plus d'autres rayons qui peuvent causer des blessures à la peau et les yeux. Le métal incandescent peut causer des brûlures. Une formation reliée à l'usage des processus et de l'équipement est essentielle pour prévenir les accidents. Par conséquent:

1. Portez des lunettes protectrices munies d'écrans latéraux lorsque vous êtes dans l'aire de travail, même si vous devez porter un casque de soudeur, un écran facial ou des lunettes étanches.
2. Portez un écran facial muni de verres filtrants et de plaques protectrices appropriées afin de protéger vos yeux, votre visage, votre cou et vos oreilles des étincelles et des rayons de l'arc lors d'une opération ou lorsque vous observez une opération. Avertissez les personnes se trouvant à proximité de ne pas regarder l'arc et de ne pas s'exposer aux rayons de l'arc électrique ou le métal incandescent.
3. Portez des gants ignifugés à crêpe, une chemise épaisse à manches longues, des pantalons sans rebord et des chaussures montantes afin de vous protéger des rayons de l'arc, des étincelles et du métal incandescent, en plus d'un casque de soudeur ou casquette pour protéger vos cheveux. Il est également recommandé de porter un tablier ignifugé afin de vous protéger des étincelles et de la chaleur par rayonnement.
4. Les étincelles et les projections de métal incandescent risquent de se loger dans les manches retroussées, les rebords de pantalons ou les poches. Il est recommandé de garder boutonnés le col et les manches et de porter des vêtements sans poches en avant.
5. Protégez toute personne se trouvant à proximité des étincelles et des rayons de l'arc à l'aide d'un rideau ou d'une cloison ignifugée.
6. Portez des lunettes étanches par dessus vos lunettes de sécurité lors des opérations d'écaillage ou de meulage du laitier. Les écailles de laitier incandescent peuvent être projetées à des distances considérables. Les personnes se trouvant à proximité doivent également porter des lunettes étanches par dessus leur lunettes de sécurité.

INCENDIES ET EXPLOSIONS -- La chaleur provenant des flammes ou de l'arc peut provoquer un incendie. Le laitier incandescent ou les étincelles peuvent également provoquer un incendie ou une explosion. Par conséquent :



1. Éloignez suffisamment tous les matériaux combustibles de l'aire de travail et recouvrez les matériaux avec un revêtement protecteur ininflammable. Les matériaux combustibles incluent le bois, les vêtements, la sciure, le gaz et les liquides combustibles, les solvants, les peintures et les revêtements, le papier, etc.
2. Les étincelles et les projections de métal incandescent peuvent tomber dans les fissures dans les planchers ou dans les ouvertures des murs et déclencher un incendie couvant à l'étage inférieur. Assurez-vous que ces ouvertures sont bien protégées des étincelles et du métal incandescent.
3. N'exécutez pas de soudure, de coupe ou autre travail à chaud avant d'avoir complètement nettoyé la surface de la pièce à traiter de façon à ce qu'il n'ait aucune substance présente qui pourrait produire des vapeurs inflammables ou toxiques. N'exécutez pas de travail à chaud sur des contenants fermés car ces derniers pourraient exploser.
4. Assurez-vous qu'un équipement d'extinction d'incendie est disponible et prêt à servir, tel qu'un tuyau d'arrosage, un seau d'eau, un seau de sable ou un extincteur portatif. Assurez-vous d'être bien instruit par rapport à l'usage de cet équipement.
5. Assurez-vous de ne pas excéder la capacité de l'équipement. Par exemple, un câble de soudage surchargé peut surchauffer et provoquer un incendie.
6. Une fois les opérations terminées, inspectez l'aire de travail pour assurer qu'aucune étincelle ou projection de métal incandescent ne risque de provoquer un incendie ultérieurement. Employez des guetteurs d'incendie au besoin.
7. Pour obtenir des informations supplémentaires, consultez le NFPA Standard 51B, "Fire Prevention in Use of Cutting and Welding Processes", disponible au National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.



CHOC ÉLECTRIQUE -- Le contact avec des pièces électriques ou les pièces de mise à la terre sous tension peut causer des blessures graves ou mortelles. NE PAS utiliser un courant de soudage c.a. dans un endroit humide, en espace restreint ou si un danger de chute se pose.

1. Assurez-vous que le châssis de la source d'alimentation est branché au système de mise à la terre de l'alimentation d'entrée.
2. Branchez la pièce à traiter à une bonne mise de terre électrique.
3. Branchez le câble de masse à la pièce à traiter et assurez une bonne connexion afin d'éviter le risque de choc électrique mortel.
4. Utilisez toujours un équipement correctement entretenu. Remplacez les câbles usés ou endommagés.
5. Veillez à garder votre environnement sec, incluant les vêtements, l'aire de travail, les câbles, le porte-électrode/torche et la source d'alimentation.
6. Assurez-vous que tout votre corps est bien isolé de la pièce à traiter et des pièces de la mise à la terre.
7. Si vous devez effectuer votre travail dans un espace restreint ou humide, ne tenez vous pas directement sur le métal ou sur la terre; tenez-vous sur des planches sèches ou une plate-forme isolée et portez des chaussures à semelles de caoutchouc.
8. Avant de mettre l'équipement sous tension, isolez vos mains avec des gants secs et sans trous.
9. Mettez l'équipement hors tension avant d'enlever vos gants.
10. Consultez ANSI/ASC Standard Z49.1 (listé à la page suivante) pour des recommandations spécifiques concernant les procédures de mise à la terre. Ne pas confondre le câble de masse avec le câble de mise à la terre.



CHAMPS ÉLECTRIQUES ET MAGNÉTIQUES — comportent un risque de danger. Le courant électrique qui passe dans n'importe quel conducteur produit des champs électriques et magnétiques localisés. Le soudage et le courant de coupage créent des champs électriques et magnétiques autour des câbles de soudage et l'équipement. Par conséquent :

1. Un soudeur ayant un stimulateur cardiaque doit consulter son médecin avant d'entreprendre une opération de soudage. Les champs électriques et magnétiques peuvent causer des ennuis pour certains stimulateurs cardiaques.
2. L'exposition à des champs électriques et magnétiques peut avoir des effets néfastes inconnus pour la santé.

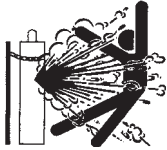
3. Les soudeurs doivent suivre les procédures suivantes pour minimiser l'exposition aux champs électriques et magnétiques :
 - A. Acheminez l'électrode et les câbles de masse ensemble. Fixez-les à l'aide d'une bande adhésive lorsque possible.
 - B. Ne jamais enrouler la torche ou le câble de masse autour de votre corps.
 - C. Ne jamais vous placer entre la torche et les câbles de masse. Acheminez tous les câbles sur le même côté de votre corps.
 - D. Branchez le câble de masse à la pièce à traiter le plus près possible de la section à souder.
 - E. Veillez à garder la source d'alimentation pour le soudage et les câbles à une distance appropriée de votre corps.



LES VAPEURS ET LES GAZ -- peuvent causer un malaise ou des dommages corporels, plus particulièrement dans les espaces restreints. Ne respirez pas les vapeurs et les gaz. Le gaz de protection risque de causer l'asphyxie. Par conséquent :

1. Assurez en permanence une ventilation adéquate dans l'aire de travail en maintenant une ventilation naturelle ou à l'aide de moyens mécanique. N'effectuez jamais de travaux de soudage, de coupage ou de gougeage sur des matériaux tels que l'acier galvanisé, l'acier inoxydable, le cuivre, le zinc, le plomb, le beryllium ou le cadmium en l'absence de moyens mécaniques de ventilation efficaces. Ne respirez pas les vapeurs de ces matériaux.
2. N'effectuez jamais de travaux à proximité d'une opération de dégraissage ou de pulvérisation. Lorsque la chaleur ou le rayonnement de l'arc entre en contact avec les vapeurs d'hydrocarbure chloré, ceci peut déclencher la formation de phosgène ou d'autres gaz irritants, tous extrêmement toxiques.
3. Une irritation momentanée des yeux, du nez ou de la gorge au cours d'une opération indique que la ventilation n'est pas adéquate. Cessez votre travail afin de prendre les mesures nécessaires pour améliorer la ventilation dans l'aire de travail. Ne poursuivez pas l'opération si le malaise persiste.
4. Consultez ANSI/ASC Standard Z49.1 (à la page suivante) pour des recommandations spécifiques concernant la ventilation.

5. AVERTISSEMENT : Ce produit, lorsqu'il est utilisé dans une opération de soudage ou de coupage, dégage des vapeurs ou des gaz contenant des chimiques considérées par l'état de la Californie comme étant une cause des malformations congénitales et dans certains cas, du cancer. (California Health & Safety Code §25249.5 et seq.)



MANIPULATION DES CYLINDRES --
La manipulation d'un cylindre, sans observer les précautions nécessaires, peut produire des fissures et un échappement dangereux des gaz.

Une brisure soudaine du cylindre, de la soupape ou du dispositif de surpression peut causer des blessures graves ou mortelles. Par conséquent :

1. Utilisez toujours le gaz prévu pour une opération et le détendeur approprié conçu pour utilisation sur les cylindres de gaz comprimé. N'utilisez jamais d'adaptateur. Maintenez en bon état les tuyaux et les raccords. Observez les instructions d'opération du fabricant pour assembler le détendeur sur un cylindre de gaz comprimé.
2. Fixez les cylindres dans une position verticale, à l'aide d'une chaîne ou une sangle, sur un chariot manuel, un châssis de roulement, un banc, un mur, une colonne ou un support convenable. Ne fixez jamais un cylindre à un poste de travail ou toute autre dispositif faisant partie d'un circuit électrique.
3. Lorsque les cylindres ne servent pas, gardez les soupapes fermées. Si le détendeur n'est pas branché, assurez-vous que le bouchon de protection de la soupape est bien en place. Fixez et déplacez les cylindres à l'aide d'un chariot manuel approprié. Toujours manipuler les cylindres avec soin.
4. Placez les cylindres à une distance appropriée de toute source de chaleur, des étincelles et des flammes. Ne jamais amorcer l'arc sur un cylindre.
5. Pour de l'information supplémentaire, consultez CGA Standard P-1, "Precautions for Safe Handling of Compressed Gases in Cylinders", mis à votre disposition par le Compressed Gas Association, 1235 Jefferson Davis Highway, Arlington, VA 22202.



ENTRETIEN DE L'ÉQUIPEMENT -- Un équipement entretenu de façon défectueuse ou inadéquate peut causer des blessures graves ou mortelles. Par conséquent :

1. Efforcez-vous de toujours confier les tâches d'installation, de dépannage et d'entretien à un personnel qualifié. N'effectuez aucune réparation électrique à moins d'être qualifié à cet effet.
2. Avant de procéder à une tâche d'entretien à l'intérieur de la source d'alimentation, débranchez l'alimentation électrique.
3. Maintenez les câbles, les fils de mise à la terre, les branchements, le cordon d'alimentation et la source d'alimentation en bon état. N'utilisez jamais un équipement s'il présente une défectuosité quelconque.
4. N'utilisez pas l'équipement de façon abusive. Gardez l'équipement à l'écart de toute source de chaleur, notamment des fours, de l'humidité, des flaques d'eau, de l'huile ou de la graisse, des atmosphères corrosives et des intempéries.
5. Laissez en place tous les dispositifs de sécurité et tous les panneaux de la console et maintenez-les en bon état.
6. Utilisez l'équipement conformément à son usage prévu et n'effectuez aucune modification.



INFORMATIONS SUPPLÉMENTAIRES RELATIVES À LA SÉCURITÉ -- Pour obtenir de l'information supplémentaire sur les règles de sécurité à observer pour l'équipement de soudage à l'arc électrique et le coupage, demandez un exemplaire du livret "Precautions and Safe Practices for Arc Welding, Cutting and Gouging", Form 52-529.

Les publications suivantes sont également recommandées et mises à votre disposition par l'American Welding Society, 550 N.W. LeJuene Road, Miami, FL 33126 :

1. ANSI/ASC Z49.1 - "Safety in Welding and Cutting"
2. AWS C5.1 - "Recommended Practices for Plasma Arc Welding"
3. AWS C5.2 - "Recommended Practices for Plasma Arc Cutting"
4. AWS C5.3 - "Recommended Practices for Air Carbon Arc Gouging and Cutting"



SIGNIFICATION DES SYMBOLES

Ce symbole, utilisé partout dans ce manuel, signifie "Attention" ! Soyez vigilant ! Votre sécurité est en jeu.



DANGER

Signifie un danger immédiat. La situation peut entraîner des blessures graves ou mortelles.



AVERTISSEMENT

Signifie un danger potentiel qui peut entraîner des blessures graves ou mortelles.



ATTENTION

Signifie un danger qui peut entraîner des blessures corporelles mineures.

WARNING

THE PLASMA ARC CUTTING PROCESS EMPLOYS HIGH VOLTAGES. CONTACT WITH "LIVE" PARTS OF THE TORCH AND MACHINE MUST BE AVOIDED. ALSO, THE IMPROPER USE OF ANY OF THE GASES EMPLOYED CAN PRESENT A SAFETY HAZARD. BEFORE BEGINNING OPERATION WITH THE PT-37 TORCH, REFER TO THE SAFETY PRECAUTIONS AND OPERATING INSTRUCTIONS IN THE APPROPRIATE POWER SOURCE INSTRUCTION MANUAL.

USING THE PT-37 TORCH ON ANY UNIT NOT EQUIPPED WITH A MATING SAFETY INTERLOCK CIRCUIT MAY EXPOSE OPERATOR TO UNEXPECTED HIGH VOLTAGE.

2.0 Description

The patented PT-37 torch severs up to 1-1/4 inch material using air as the plasma and shielding gas. Utilizing a blowback start and an electronically controlled pilot arc the PT-37 sets a new standard for starting reliability, cutting characteristics and consumable life.

This manual is intended to provide the operator with all the information required to assemble, operate, and repair the PT-37 Plasma Arc Cutting Torch. For additional safety precautions, process instructions, and system troubleshooting; refer to the appropriate instruction manual for your Plasma Arc Cutting Package.

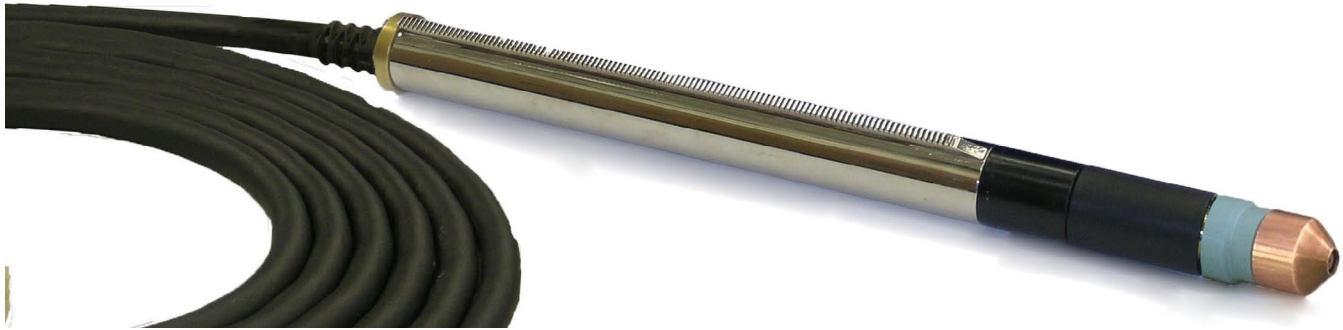
- 100% Duty Cycle for enhanced productivity allowing for continuous operation even at maximum thickness.
- Utilizes a "drawn arc" to initiate the cut which eliminates high frequency interference from the starting circuits.
- An optional remote starting system allows the torch to be located up to 150' (45m) away from the power supply.
- Machined torch body with 1-3/8" (35mm) metal handle, available with and without 32-pitch rack to fit industry standard torch holders.
- Robust machined torch components provide for reliability, durability and ease of maintenance.
- Metal nozzle and shield stand up to the toughest cutting conditions.
- Wear parts are available individually, in sets and in value packs which eases ordering and saves money.

WARNING

DO NOT USE OXYGEN WITH THIS TORCH! A HAZARDOUS FIRE MAY RESULT.

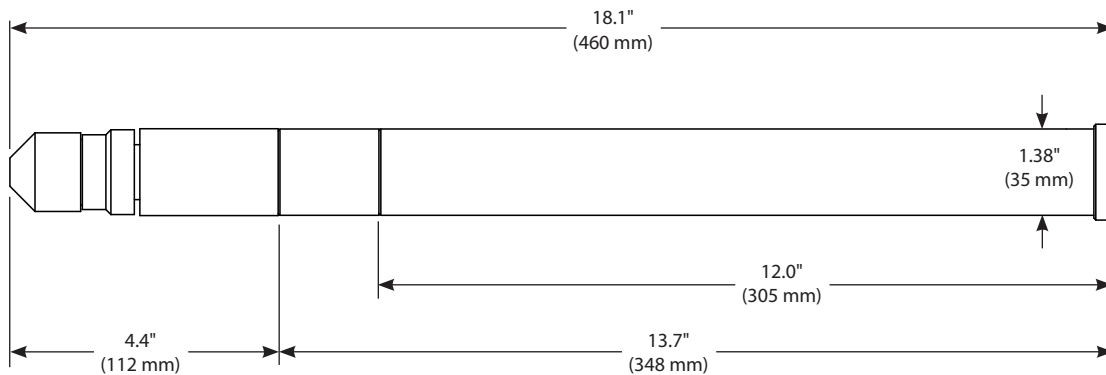


2.1 Torch Specifications:



Pierces and Cuts.....	3/4 in. (19 mm); severs 1-1/4 in. (32 mm)
Current Capacity.....	100 amps @ 100% duty cycle
Nominal Flow Rate (with 100 amp consumables)	490 cfh @ 80 psig (231 l/min @ 5.5 bar)
Length of Service Lines	4.5 ft (1.4 m), 17 ft (5.2 m), 25 ft (7.6 m) or 50 ft (15.2 m)
Optional Service Line Extensions	50 ft (15 m), 75 ft (23 m) 100 ft (30 m)

Dimensions:



PT-37 Torches:

PT-37 Torch with rack 4.5' (1.4 m).....	0558004860
PT-37 Torch with rack 17' (5.2 m).....	0558004861
PT-37 Torch with rack 25' (7.6 m).....	0558004862
PT-37 Torch with rack 50' (15.2 m)	0558004863
PT-37 Torch w/o rack 4.5' (1.4 m).....	0558004894
PT-37 Torch w/o rack 17' (5.2 m).....	0558004895
PT-37 Torch w/o rack 25' (7.6 m).....	0558004896
PT-37 Torch w/o rack 50' (15.2 m)	0558004897

Compatible ESAB Consoles:

ESP-101:

460 V Console.....	0558004880
380-400 V CE Console	0558005215



Powercut-900:

208/230 V Mechanized Console	0558008126
208/230 V Mechanized Console Bilingual	0558008126F
230 V CE Mechanized Console.....	0558008139
460 V Mechanized Console	0558008130
400 V Mechanized Console	0558008931
400 V CE Mechanized Console.....	0558008138
575 V Mechanized Console Bilingual	0558008140

Powercut-1300:

208-230/460 V Mechanized Console	0558007881
208-230/460 V Mechanized Console Bilingual	0558007881F
400 V Mechanized Console	0558008932
400 V CE Mechanized Console	0558007882
575 V Mechanized Console Bilingual	0558008141

Powercut-1600:

208-230/460 V Mechanized Console	0558007883
208-230/460 V Mechanized Console Bilingual	0558007883F
400 V Mechanized Console	0558008933
400 V CE Mechanized Console.....	0558007884
575 V Mechanized Console Bilingual	0558008142



2.2 Optional Accessories:

Torch Holder Assembly..... p/n 0558005926

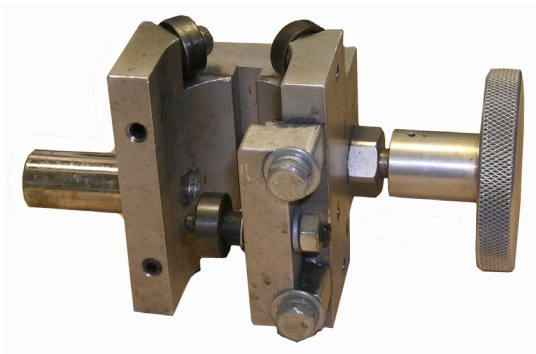


Plate Rider p/n 0560936972
Used to maintain a constant standoff while cutting thin materials or using machines without automatic height control.



Remote Junction Box.....p/n 0558004887
Enables 50', 75' or 100' extension cables to be used between the ESP-101 power supply and the existing torch service line. *Not intended for use with the mechanized versions of the PC-900/1300/1600 power supplies.*



Extension Cable, 50 ft (15m) for Remote Junction Box.....p/n 0558004888
75 ft (23m) for Remote Junction Boxp/n 0558009266
100 ft (30m) for Remote Junction Box.....p/n 0558004889

Gas Flow Measuring Kitp/n 0558000739
Valuable troubleshooting tool allows measurement of the actual air flow through the torch.

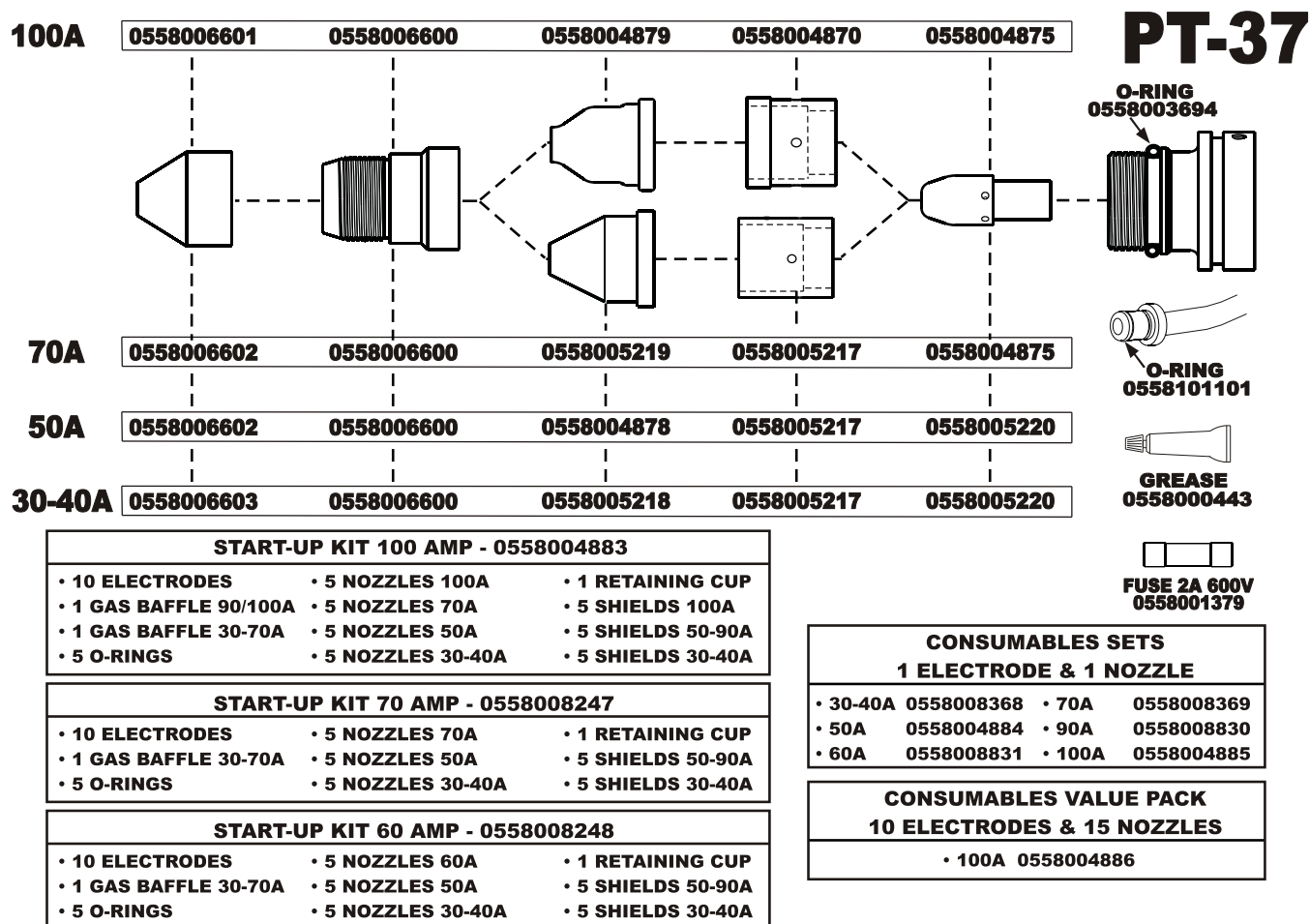


SECTION 2**DESCRIPTION****2.3 Start-up Kits and Consumable Sets:**

PT-37 Start-Up Kits					
0558004883 100 Amp	0558008889 90 Amp	0558008247 70 Amp	0558008248 60 Amp	Part No	Description
10	10	10	10	0558004875	Electrode, Silver
1	1	1	1	0558005217	Gas Baffle, 30-70 Amp
1	1	-	-	0558004870	Gas Baffle, 90 / 100 Amp
5	5	5	5	0558005218	Nozzle, 30-40 Amp
5	5	5	5	0558004878	Nozzle, 50 Amp
-	-	-	5	0558008417	Nozzle, 60 Amp
5	5	5	-	0558005219	Nozzle, 70 Amp
-	5	-	-	0558007680	Nozzle, 90 Amp
5	-	-	-	0558004879	Nozzle, 100 Amp
1	1	1	1	0558006600	Retaining Cup with Threads
5	5	5	5	0558006603	Shield, 30-40 Amp
5	5	5	5	0558006602	Shield, 50-90 Amp
5	-	-	-	0558006601	Shield, 100 Amp
5	5	5	5	0558003694	O-ring, .674 ID x .103 W Neoprene
1	1	1	1	0558000443	Grease, Silicon Dow DC-111 (0.25 oz)

PT-37 Consumable Sets								
0558004886 100 Amp Value Pack	0558004885 100 Amp	0558008830 90 Amp	0558008369 70 Amp	0558008831 60 Amp	0558004884 50 Amp	0558008368 30-40 Amp	Part No	Description
-	-	-	-	-	1	1	0558005220	Electrode
10	1	1	1	1	-	-	0558004875	Electrode, Silver
-	-	-	-	-	-	1	0558005218	Nozzle, 30-40 Amp
-	-	-	-	1	1	-	0558004878	Nozzle, 50 Amp
-	-	-	-	-	-	-	0558008417	Nozzle, 60 Amp
-	-	-	1	-	-	-	0558005219	Nozzle, 70 Amp
-	-	1	-	-	-	-	0558007680	Nozzle, 90 Amp
15	1	-	-	-	-	-	0558004879	Nozzle, 100 Amp

2.4 Consumable Breakdown:



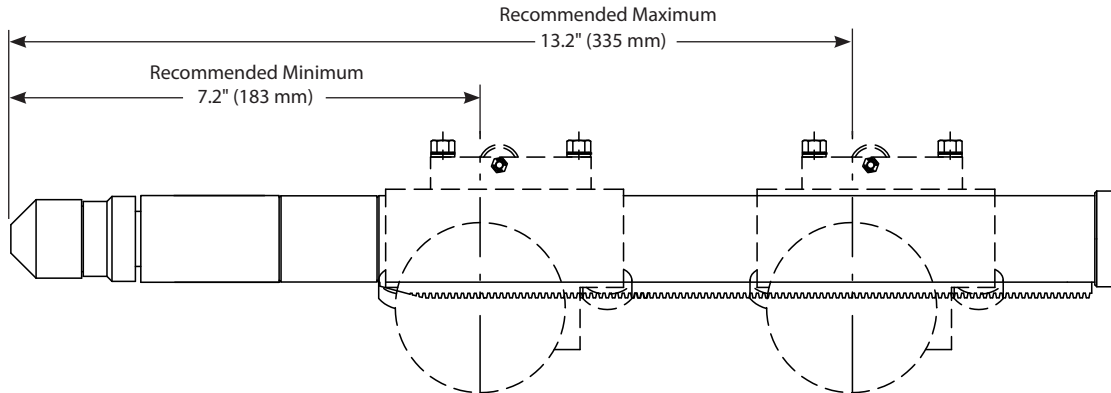
WARNING

MAKE SURE POWER SWITCH ON CONSOLE IS IN OFF POSITION AND PRIMARY INPUT POWER IS DE-ENERGIZED.

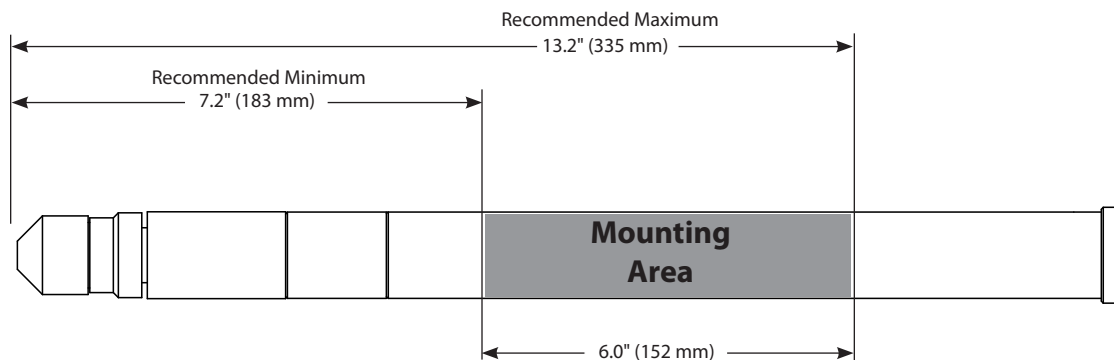
3.0 Installation

3.1 Torch Mounting

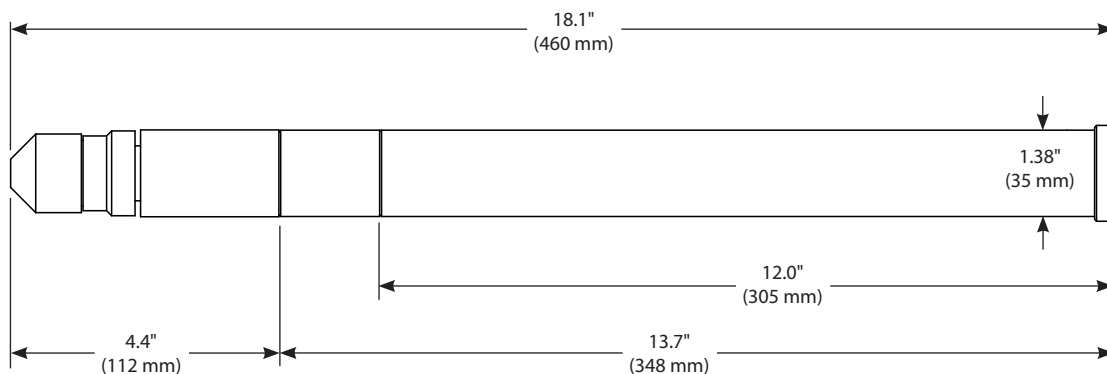
With Torch Holder Assembly, P/N 0558005926



With Customer Supplied Holder



Torch Dimensions



3.2 Torch Installation ESP-101

1. Remove torch lead access door on the left side of the ESP-101.

Torch Lead Access Door



2. Insert the torch cable through the torch access opening on the front of the console.

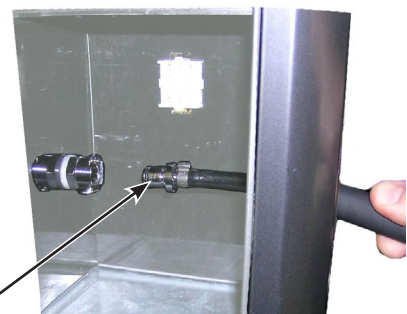
Torch Cable

Torch Access Opening



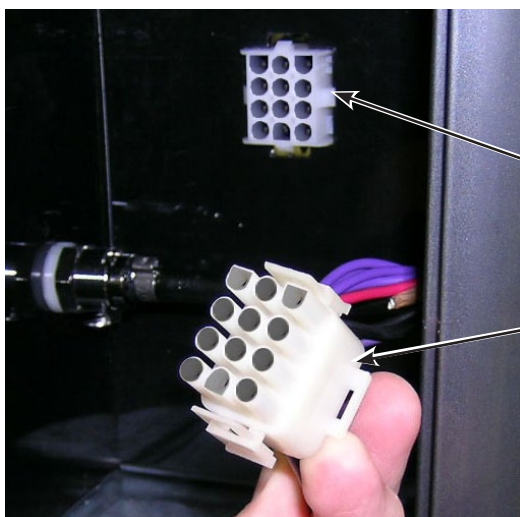
3. Connect the air hose to the quick-connect fitting.
4. Connect the torch cable male receptacle to the panel receptacle. Check orientation of the sockets to ensure a cor-

Air Hose



Power Cable Female Receptacle

Power Cable Male Receptacle

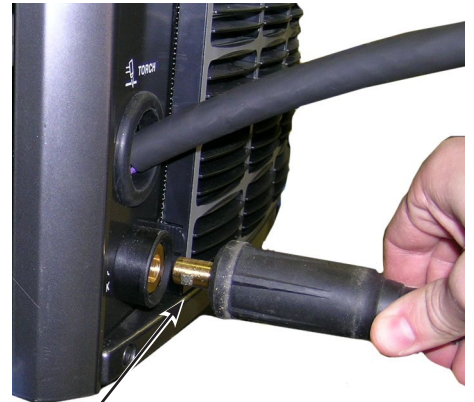


rect fit.

Torch Lead Access Door



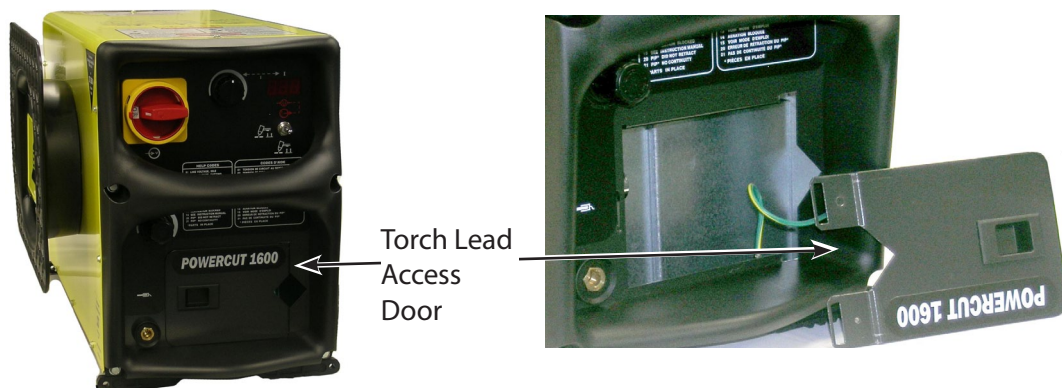
5. Replace the torch lead access door.
6. Insert the work cable into receptacle on the front of the console and turn clockwise until secure.



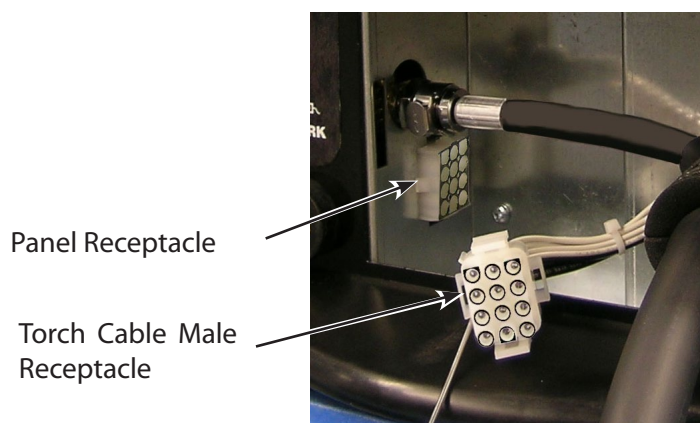
Work Cable

3.3 Torch Installation Powercut 900/1300/1600

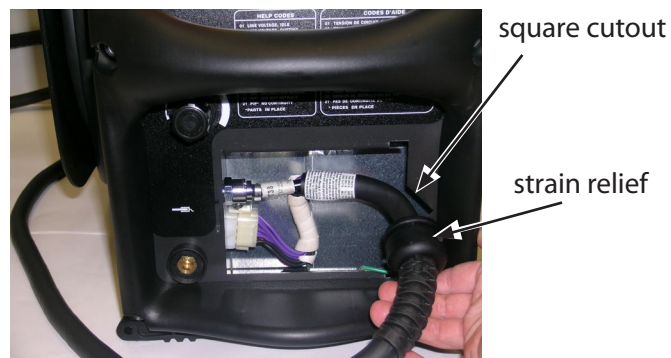
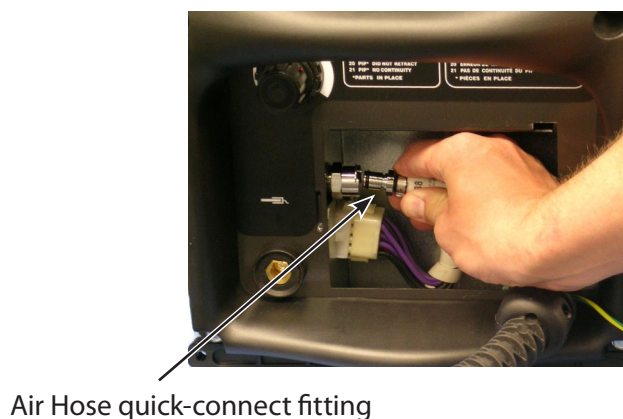
1. Open torch lead access door on the front panel of the Powercut-1300/1600.



2. Connect the torch cable male receptacle to the panel receptacle. Check orientation of the sockets to ensure a correct fit.



3. Connect the air hose to the quick-connect fitting. Place the strain relief in the square cutout in the front of the console. Line up the groove of the strain relief with the half square cutout area.

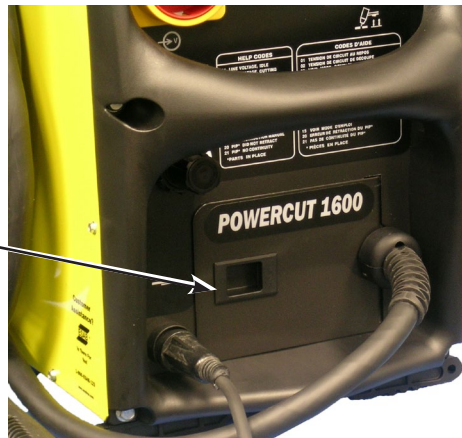


4. Insert work cable into receptacle on the front of the console and turn clockwise until secure.
5. Replace torch lead access door.



Work Cable

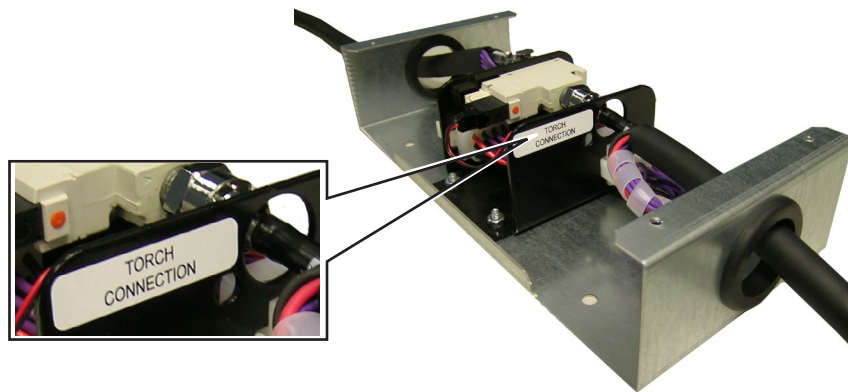
Torch Lead Access Door



3.4 Torch Installation Remote Junction Box



1. Remove cover. Mount box. Connect extension cable between the power supply and remote junction box. Refer to remote junction box instruction manual. Note that the solenoid is wired to the power supply / extension cable receptacle side of the box.



2. Connect the air hose to the quick-connect fitting.
3. Connect the torch cable male receptacle to the panel receptacle. Check orientation of the sockets to ensure a correct fit.
4. Replace cover.

DANGER**DO NOT USE OXYGEN WITH THIS TORCH! A HAZARDOUS FIRE MAY RESULT.**

4.0 Cutting with the PT-37

Use the following procedures to cut with the PT-37 torch.

4.1 Installing Consumables

Tests have shown that with proper use of the torch within rated operating conditions (especially arc current and gas flow rate), the torch consumable parts do not become loose if they are firmly installed. Torch damage and overheating can be caused by loose parts.

1. Make sure that the wall disconnect switch is off.
2. Tighten electrode and retaining/shield cup fully at each consumable change or inspection.
3. Check consumable tightness at beginning of each work period, even if everything was working normally at the end of the previous period.

Note:

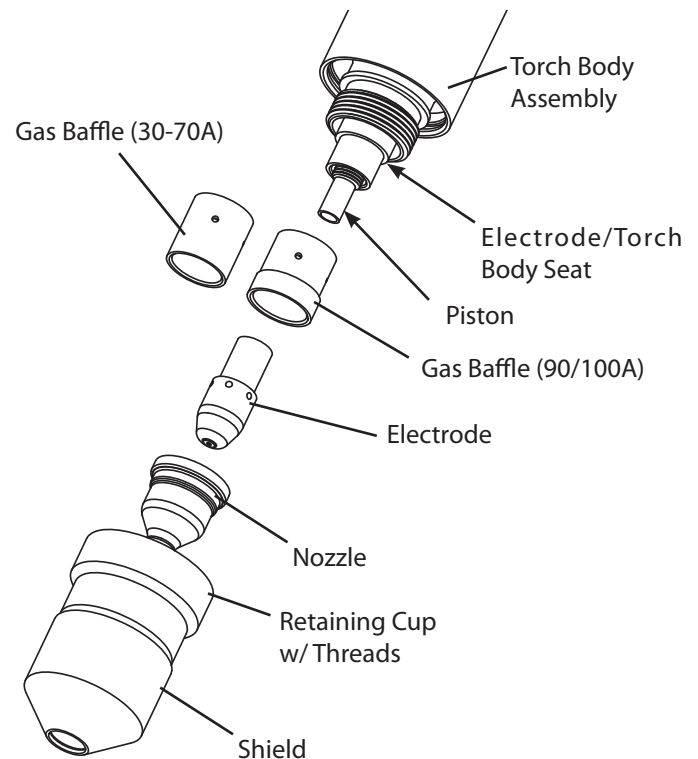
Ensure that the electrode/torch body seat and piston are clean and free of dust or dirt. Debris may prevent mating surfaces from having solid contact.

Note:

Firm tightening of the electrode by hand is sufficient, the use of tools such as wrenches or pliers is not required or recommended.

Note:

Torch damage and overheating can be caused by loose parts. Arc tracking indicates loose parts. Make sure retaining cup is tightened fully. Parts damaged by arcing will cause destruction of torch and must be replaced.



4. Make sure that the wall disconnect switch is on. Turn on the Power Switch to the cutting power source console.
5. Set Pressure Regulator to 80 psig (5.5 bar).
6. Adjust torch standoff to required initial / piercing height.

DANGER

DO NOT USE OXYGEN WITH THIS TORCH! A HAZARDOUS FIRE MAY RESULT.

4.2 Cut Data

Use the following pages for initial cutting parameters. Variations in material and conditions may require adjustments to be made to obtain desired results.

4.2.1 Pressure Reduction for 4.5' (1.4 m) and 17' (5.2 m) Torch Lengths

With or without Junction Box installed: When using 4.5' (1.4 m) or 17' (5.2 m) torch assemblies, plasma gas settings should be reduced 5 - 10 psi (.35 - .69 bar) for optimum performance.

4.3 Operation of Power Source

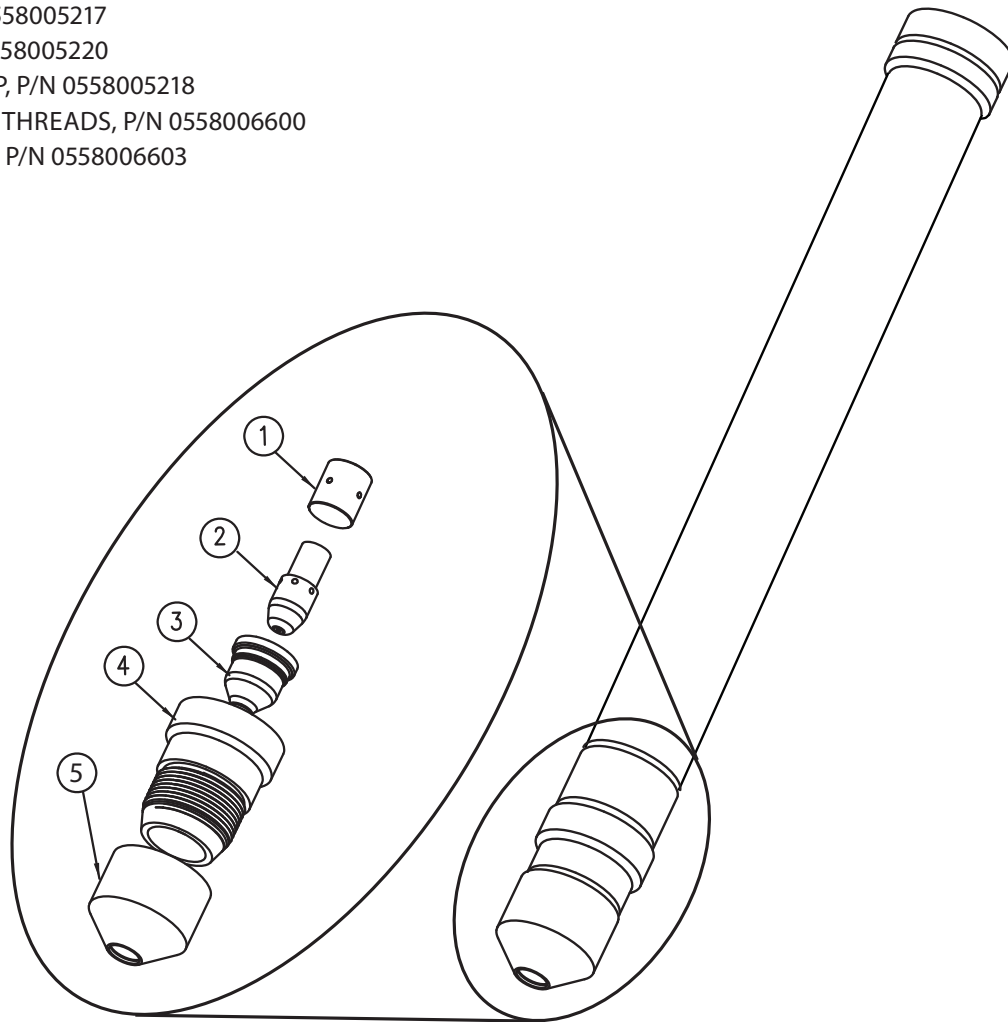
For operation of the power source, refer to ESP-101 or Powercut-900/1300/1600 power source instruction manual.



**PLASMARC™ Cutting Torch**

Material:	Galvanized Steel
Amperes:	30 and 40
Plasma Gas:	Air @ 80 psi (5.5 bar)

1. GAS BAFFLE, P/N 0558005217
2. ELECTRODE, P/N 0558005220
3. NOZZLE, 30-40 AMP, P/N 0558005218
4. RETAINING CUP W/ THREADS, P/N 0558006600
5. SHIELD, 30-40 AMP, P/N 0558006603



PT-37 30 & 40 amp Galvanized Steel Data

Inch cutting data

Material Thickness		Cutting Current	*Initial Height	*Pierce Height	Cutting Height	Arc Voltage	Pierce Delay	Kerf Width	Optimum Speed	Maximum Speed
Gauge	Inches	Amps	Inches	Inches	Inches	Volts	msec	Inches	IPM	IPM
24ga	0.028	30	0.156	0.156	0.062	117	0	0.030	300	405
22ga	0.034	30	0.156	0.156	0.062	118	0	0.032	270	355
20ga	0.040	30	0.156	0.156	0.062	119	0	0.033	260	330
18ga	0.052	30	0.156	0.156	0.062	120	0	0.035	235	280
16ga	0.064	30	0.156	0.156	0.062	124	0	0.036	180	210
14ga	0.079	40	0.156	0.156	0.078	119	0	0.040	220	250
12ga	0.108	40	0.156	0.156	0.078	121	100	0.041	170	195
10ga	0.138	40	0.188	0.188	0.090	123	100	0.050	110	140

Metric Cutting Data

Material Thickness	Cutting Current	*Initial Height	*Pierce Height	Cutting Height	Arc Voltage	Pierce Delay	Kerf Width	Optimum Speed	Maximum Speed
mm	Amps	mm	mm	mm	Volts	msec	mm	mm/min	mm/min
0.7	30	4.0	4.0	1.6	117	0	0.8	7600	10300
0.8	30	4.0	4.0	1.6	118	0	0.8	7200	9700
0.9	30	4.0	4.0	1.6	118	0	0.8	6800	8900
1	30	4.0	4.0	1.6	119	0	0.8	6600	8400
1.5	30	4.0	4.0	1.6	122	0	0.9	5100	6100
2	40	4.0	4.0	2.0	119	0	1.0	5600	6400
2.5	40	4.0	4.0	2.0	120	50	1.0	4700	5400
3	40	4.2	4.2	2.1	122	100	1.1	3800	4500
3.5	40	4.8	4.8	2.3	123	100	1.3	2800	3600

* When using a plate rider, use cutting height.

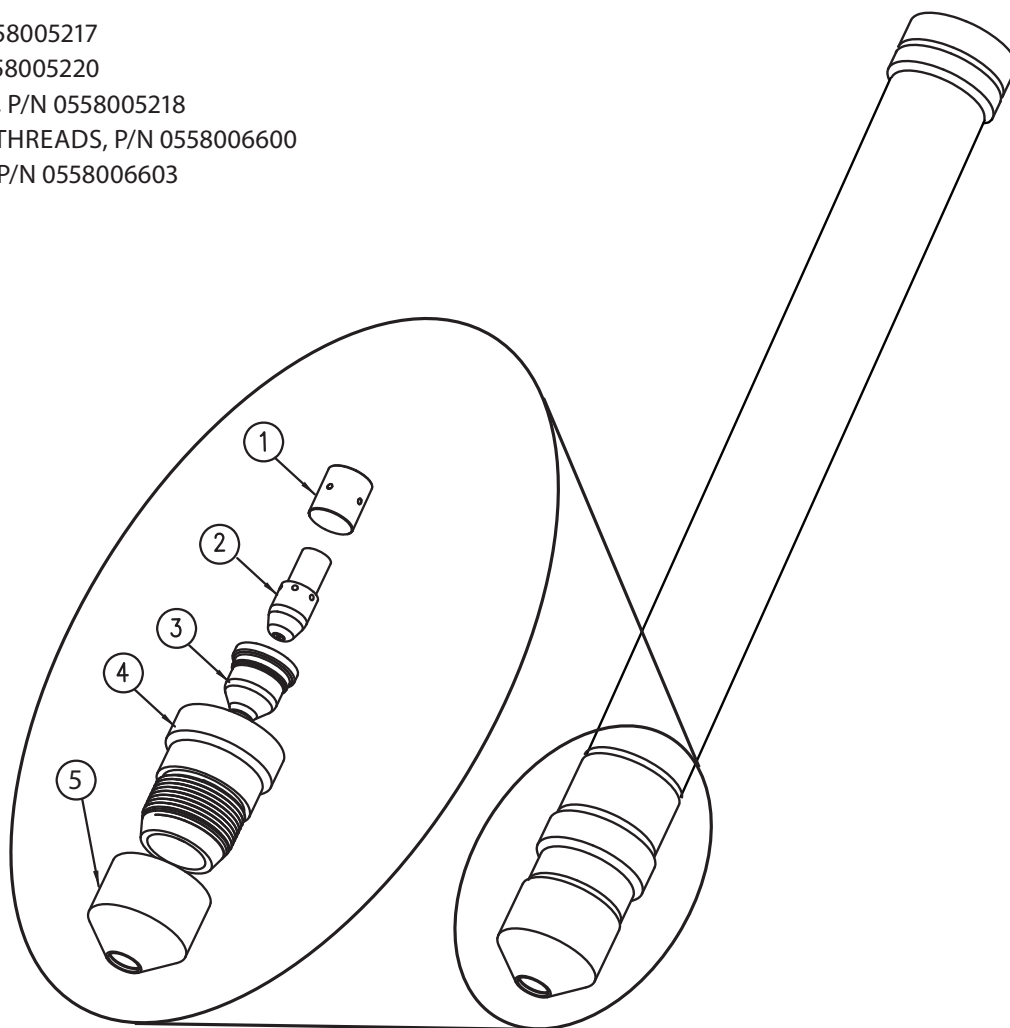
* When using a height control, the initial height may need to be reduced depending on the surface condition of the material.

The published cut speeds are the result of ESAB's laboratory testing. The actual optimum and maximum cutting speeds may vary based on material composition, surface quality (rust, surface scale or primers, etc.) and various user setup parameters.

**PLASMARC™ Cutting Torch**

Material:	Carbon Steel
Amperes:	30 and 40
Plasma Gas:	Air @ 80 psi (5.5 bar)

1. GAS BAFFLE, P/N 0558005217
2. ELECTRODE, P/N 0558005220
3. NOZZLE, 30-40 AMP, P/N 0558005218
4. RETAINING CUP W/ THREADS, P/N 0558006600
5. SHIELD, 30-40 AMP, P/N 0558006603



PT-37 30 & 40 amp Carbon Steel Data

Inch cutting data

Material Thickness		Cutting Current	Initial Height	Pierce Height	Cutting Height	Arc Voltage	Pierce Delay	Kerf Width	Optimum Speed	Maximum Speed
Gauge/ Fraction	Inches	Amps	Inches	Inches	Inches	Volts	msec	Inches	IPM	IPM
26ga	0.018	30	0.188	0.188	0.062	118	0	0.033	500	690
24ga	0.024	30	0.188	0.188	0.062	119	0	0.034	450	615
22ga	0.030	30	0.188	0.188	0.062	120	0	0.035	400	540
20ga	0.036	30	0.188	0.188	0.062	121	0	0.035	350	465
18ga	0.048	30	0.188	0.188	0.062	122	0	0.035	255	315
16ga	0.060	30	0.188	0.188	0.062	124	0	0.040	150	200
14ga	0.075	40	0.188	0.188	0.078	119	0	0.045	220	250
12ga	0.105	40	0.188	0.188	0.085	121	50	0.048	155	190
1/8"	0.125	40	0.188	0.188	0.090	122	100	0.050	110	150
10ga	0.135	40	0.188	0.188	0.090	122	100	0.051	100	140
8ga	0.165	40	0.188	0.188	0.090	123	100	0.054	81	110
3/16"	0.188	40	0.188	0.188	0.090	124	100	0.056	64	86
6ga	0.194	40	0.189	0.189	0.090	124	100	0.057	62	83
4ga	0.224	40	0.195	0.195	0.090	126	125	0.059	55	71
1/4"	0.250	40	0.200	0.200	0.090	127	150	0.062	48	60

Metric Cutting Data

Material Thickness	Cutting Current	Initial Height	Pierce Height	Cutting Height	Arc Voltage	Pierce Delay	Kerf Width	Optimum Speed	Maximum Speed
mm	Amps	mm	mm	mm	Volts	msec	mm	mm/min	mm/min
0.5	30	4.8	4.8	1.6	118	0	0.8	12300	17000
0.6	30	4.8	4.8	1.6	119	0	0.9	11400	15600
0.7	30	4.8	4.8	1.6	120	0	0.9	10800	14600
0.8	30	4.8	4.8	1.6	121	0	0.9	9800	13200
0.9	30	4.8	4.8	1.6	121	0	0.9	8900	11800
1	30	4.8	4.8	1.6	121	0	0.9	8200	10700
1.5	30	4.8	4.8	1.6	124	0	1.0	3800	5100
2	40	4.8	4.8	2.0	119	0	1.2	5400	6200
2.5	40	4.8	4.8	2.1	120	50	1.2	4300	5200
3	40	4.8	4.8	2.3	122	100	1.3	3100	4100
3.5	40	4.8	4.8	2.3	122	100	1.3	2600	3500
4	40	4.8	4.8	2.3	123	100	1.3	2200	3000
5	40	4.8	4.8	2.3	124	100	1.4	1550	2100
6	40	5.0	5.0	2.3	126	150	1.5	1300	1675

The published cut speeds are the result of ESAB's laboratory testing. The actual optimum and maximum cutting speeds may vary based on material composition, surface quality (rust, surface scale or primers, etc.) and various user setup parameters.

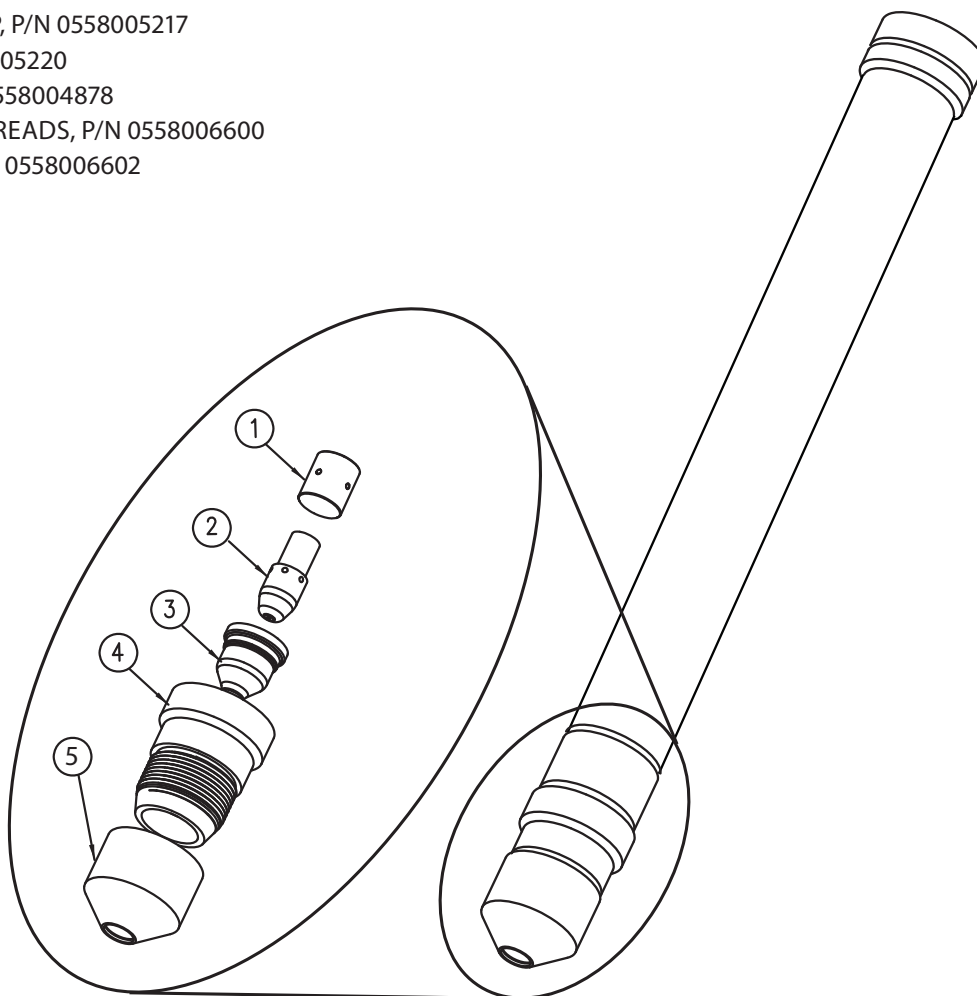


PLASMARC™ Cutting Torch
ESP-101 Plasma System

Material:	Carbon Steel
Amperes:	50
Plasma Gas:	Air @ 70 psi (4.8 bar) *

* See section 4.2.1

1. GAS BAFFLE 30-70 AMP, P/N 0558005217
2. ELECTRODE, P/N 0558005220
3. NOZZLE 50 AMP, P/N 0558004878
4. RETAINING CUP W/ THREADS, P/N 0558006600
5. SHIELD 50-90 AMP, P/N 0558006602



PT-37 50 amp Carbon Steel Data

Inch cutting data

Material Thickness		Initial Height	Pierce Height	Cutting Height	Arc Voltage	Pierce Delay	Kerf Width	Optimum Speed	Maximum Speed
Gauge/Fraction	Inches	Inches	Inches	Inches	Volts	msec	Inches	IPM	IPM
16ga 1/16"	0.062	0.200	0.200	0.062	118	0	0.040	375	430
14ga	0.075	0.200	0.200	0.068	120	0	0.044	330	380
12ga	0.105	0.200	0.200	0.081	124	50	0.052	220	270
1/8"	0.125	0.200	0.200	0.090	127	100	0.058	150	195
10ga	0.135	0.200	0.200	0.091	127	100	0.059	140	185
8ga	0.165	0.200	0.200	0.093	128	100	0.061	110	155
3/16"	0.188	0.200	0.200	0.094	129	100	0.062	90	130
1/4"	0.250	0.200	0.200	0.125	133	150	0.068	65	85
3/8"	0.375	0.200	0.250	0.120	139	200	0.068	35	45
1/2"	0.500	0.200	0.250	0.077	145	400	0.072	20	27
5/8"	0.625	0.200	0.275	0.075	151	950	0.075	10	12

Metric Cutting Data

Material Thickness	Initial Height	Pierce Height	Cutting Height	Arc Voltage	Pierce Delay	Kerf Width	Optimum Speed	Maximum Speed
mm	mm	mm	mm	Volts	msec	mm	mm/min	mm/min
1.5	5.1	5.1	1.5	118	0	1.0	9800	11200
2	5.1	5.1	1.8	120	0	1.1	8000	9300
3	5.1	5.1	2.2	126	100	1.4	4400	5600
4	5.1	5.1	2.3	128	100	1.5	3000	4100
5	5.1	5.1	2.5	130	100	1.6	2200	3150
6	5.1	5.1	3.0	132	150	1.7	1800	2400
8	5.1	5.7	3.1	136	175	1.7	1250	1625
10	5.1	6.4	2.9	140	225	1.7	825	1075
12	5.1	6.4	2.2	144	350	1.8	600	775
14	5.1	6.6	1.9	147	625	1.9	400	525
15	5.1	6.8	1.9	149	800	1.9	325	410
16	5.1	7.0	1.9	151	950	1.9	250	300

The published cut speeds are the result of ESAB's laboratory testing. The actual optimum and maximum cutting speeds may vary based on material composition, surface quality (rust, surface scale or primers, etc.) and various user setup parameters.

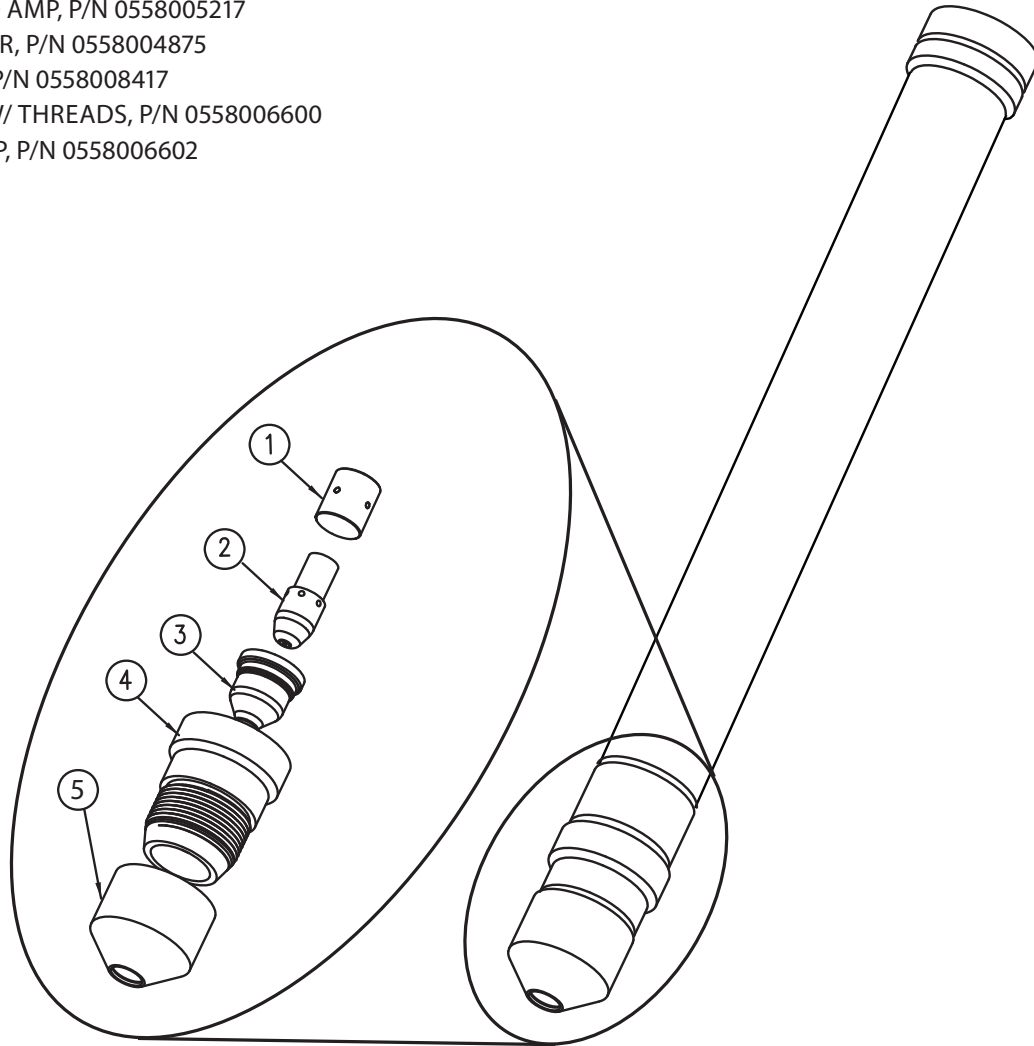


PLASMARC™ Cutting Torch
ESP-101 Plasma System

Material:	Carbon Steel
Amperes:	60
Plasma Gas:	Air @ 80 psi (5.5 bar) *

* See section 4.2.1

1. GAS BAFFLE 30-70 AMP, P/N 0558005217
2. ELECTRODE SILVER, P/N 0558004875
3. NOZZLE 60 AMP, P/N 0558008417
4. RETAINING CUP W/ THREADS, P/N 0558006600
5. SHIELD 50-90 AMP, P/N 0558006602



IMPORTANT !!!

Reminder for PowerCut-900 users:

Power Source Ratings: 60 Amps @ 60% duty cycle.
50 Amps @ 100% duty cycle.

The maximum output of the PowerCut 900 is 60 amps. However, if your application calls for a duty cycle greater than 60% the output should be reduced to 50 amps or less.

PT-37 60 amp Carbon Steel Data

Inch cutting data

Material Thickness		Initial Height	Pierce Height	Cutting Height	Arc Voltage	Pierce Delay	Kerf Width	Optimum Speed	Maximum Speed
Gauge/ Fraction	Inches	Inches	Inches	Inches	Volts	msec	Inches	IPM	IPM
1/8"	0.125	0.200	0.200	0.092	126	50	0.055	190	235
10ga	0.135	0.200	0.202	0.094	127	50	0.055	175	225
8ga	0.165	0.200	0.206	0.103	129	100	0.058	145	190
3/16"	0.188	0.200	0.210	0.109	131	100	0.060	125	165
1/4"	0.250	0.200	0.220	0.141	136	200	0.067	79	105
3/8"	0.375	0.200	0.245	0.168	143	275	0.072	43	55
1/2"	0.500	0.200	0.265	0.139	149	425	0.080	26	36
5/8"	0.625	0.200	0.278	0.132	156	925	0.084	16	20

Metric Cutting Data

Material Thickness	Initial Height	Pierce Height	Cutting Height	Arc Voltage	Pierce Delay	Kerf Width	Optimum Speed	Maximum Speed
mm	mm	mm	mm	Volts	msec	mm	mm/min	mm/min
3	5.1	5.1	2.2	125	50	1.3	5200	6400
4	5.1	5.2	2.6	128	75	1.5	3900	5100
5	5.1	5.4	2.9	131	125	1.6	3000	4000
6	5.1	5.5	3.4	135	200	1.7	2300	3000
8	5.1	5.9	3.9	139	250	1.8	1525	2000
10	5.1	6.3	4.1	143	300	1.9	1025	1325
12	5.1	6.6	3.7	147	400	2.0	750	1025
14	5.1	6.9	3.4	151	650	2.1	550	750
15	5.1	7.0	3.4	154	800	2.1	475	600
16	5.1	7.1	3.3	156	950	2.1	400	475

The published cut speeds are the result of ESAB's laboratory testing. The actual optimum and maximum cutting speeds may vary based on material composition, surface quality (rust, surface scale or primers, etc.) and various user setup parameters.

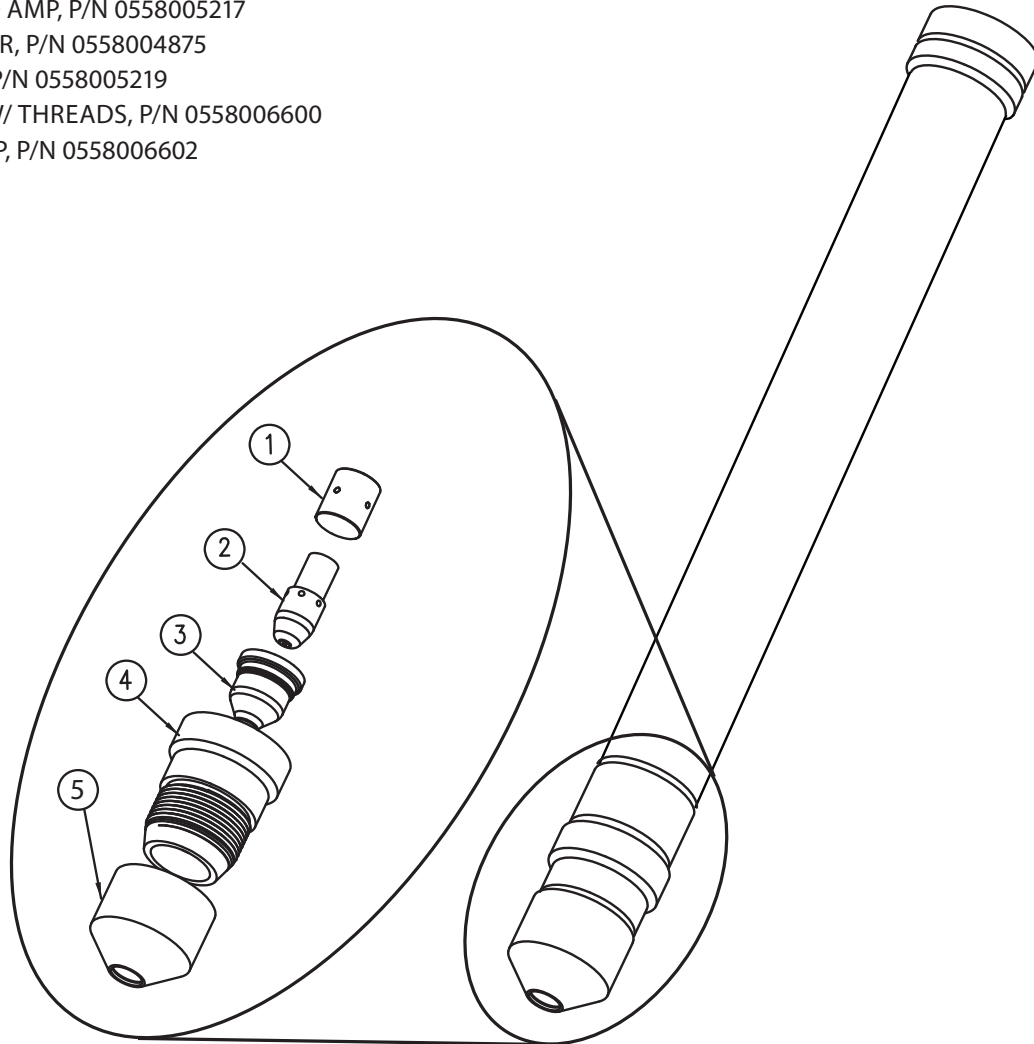


PLASMARC™ Cutting Torch
ESP-101 Plasma System

Material:	Carbon Steel
Amperes:	70
Plasma Gas:	Air @ 80 psi (5.5 bar) *

* See section 4.2.1

1. GAS BAFFLE 30-70 AMP, P/N 0558005217
2. ELECTRODE SILVER, P/N 0558004875
3. NOZZLE 70 AMP, P/N 0558005219
4. RETAINING CUP W/ THREADS, P/N 0558006600
5. SHIELD 50-90 AMP, P/N 0558006602



PT-37 70 amp Carbon Steel Data

Inch cutting data

Material Thickness		Initial Height	Pierce Height	Cutting Height	Arc Voltage	Pierce Delay	Kerf Width	Optimum Speed	Maximum Speed
Gauge/Fraction	Inches	Inches	Inches	Inches	Volts	msec	Inches	IPM	IPM
1/8"	0.125	0.200	0.200	0.093	125	0	0.051	225	275
10ga	0.135	0.200	0.203	0.098	126	0	0.052	215	265
8ga	0.165	0.200	0.213	0.113	129	100	0.056	185	230
3/16"	0.188	0.200	0.220	0.125	132	125	0.059	160	200
1/4"	0.250	0.200	0.240	0.156	139	250	0.066	93	130
3/8"	0.375	0.200	0.240	0.215	146	350	0.076	50	65
1/2"	0.500	0.200	0.280	0.200	152	450	0.088	32	45
5/8"	0.625	0.200	0.280	0.188	160	900	0.093	22	27
3/4"	0.750	0.200	NR	0.156	160	NR	0.107	12	16

Metric Cutting Data

Material Thickness	Initial Height	Pierce Height	Cutting Height	Arc Voltage	Pierce Delay	Kerf Width	Optimum Speed	Maximum Speed
mm	mm	mm	mm	Volts	msec	mm	mm/min	mm/min
3	5.1	5.0	2.3	124	0	1.3	5900	7200
4	5.1	5.3	2.8	129	50	1.4	4800	6000
5	5.1	5.7	3.3	133	150	1.5	3800	4800
6	5.1	6.0	3.8	137	225	1.6	2700	3700
8	5.1	6.1	4.7	143	300	1.8	1800	2400
10	5.1	6.2	5.4	147	350	2.0	1200	1575
12	5.1	6.9	5.2	151	450	2.2	900	1250
14	5.1	7.1	5.0	155	650	2.3	700	950
15	5.1	7.1	4.9	158	750	2.3	625	800
16	5.1	7.1	4.7	160	900	2.4	550	675
18	5.1	NR	4.2	160	NR	2.6	400	500
20	5.1	NR	3.7	160	NR	2.8	225	325

Notes:

NR = Not Recommended

The published cut speeds are the result of ESAB's laboratory testing. The actual optimum and maximum cutting speeds may vary based on material composition, surface quality (rust, surface scale or primers, etc.) and various user setup parameters.

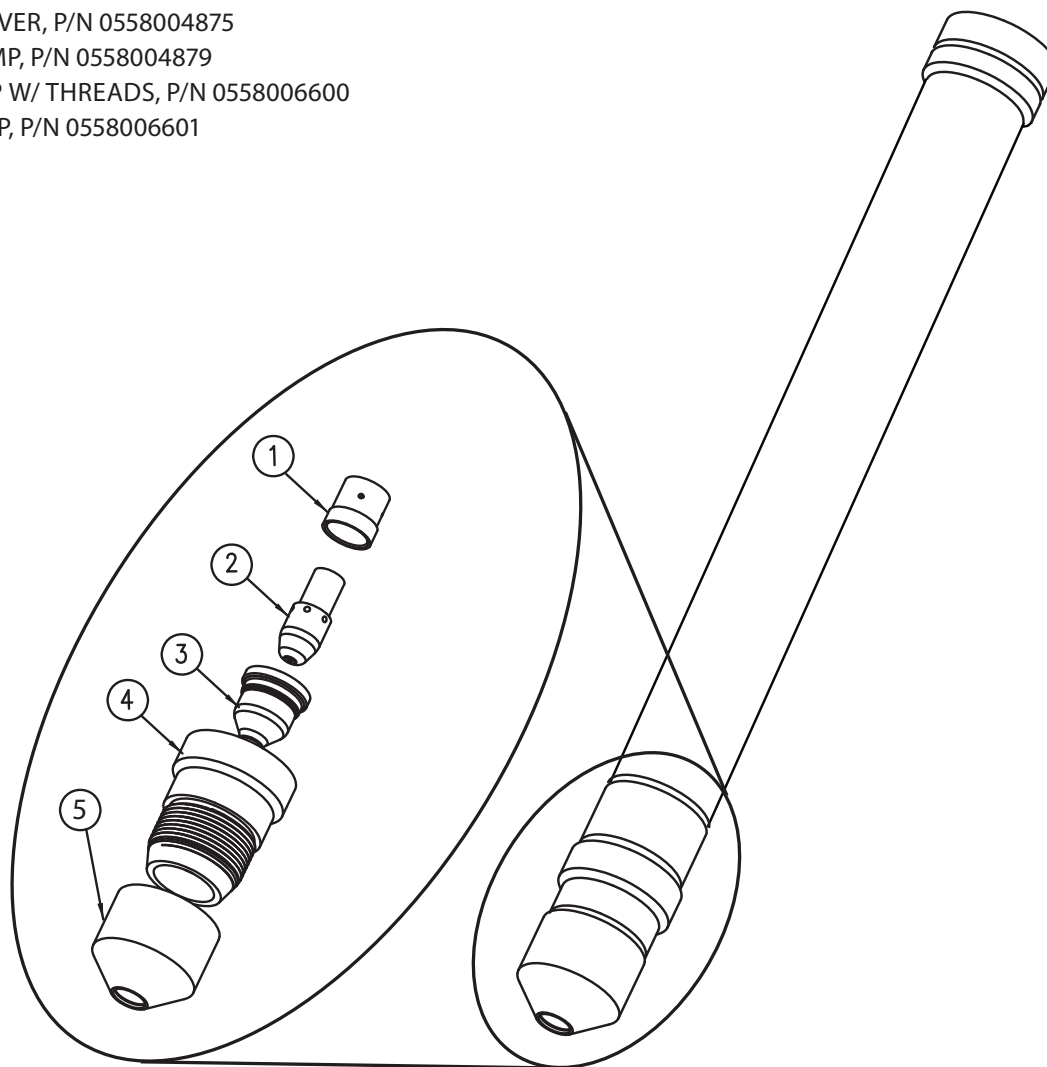


PLASMARC™ Cutting Torch
ESP-101 Plasma System

Material:	Carbon Steel
Amperes:	100
Plasma Gas:	Air @ 80 psi (5.5 bar) *

* See section 4.2.1

1. GAS BAFFLE 90/100 AMP, P/N 0558004870
2. ELECTRODE SILVER, P/N 0558004875
3. NOZZLE 100 AMP, P/N 0558004879
4. RETAINING CUP W/ THREADS, P/N 0558006600
5. SHIELD 100 AMP, P/N 0558006601



PT-37 100 amp Carbon Steel Data

Inch cutting data

Material Thickness		Initial Height	Pierce Height	Cutting Height	Arc Voltage	Pierce Delay	Kerf Width	Optimum Speed	Maximum Speed
Fraction	Inches	Inches	Inches	Inches	Volts	msec	Inches	IPM	IPM
1/4"	0.250	0.188	0.188	0.092	138	100	0.075	135	165
3/8"	0.375	0.188	0.188	0.156	149	300	0.090	77	100
1/2"	0.500	0.188	0.240	0.156	153	300	0.100	57	70
5/8"	0.625	0.188	0.240	0.156	156	400	0.110	40	45
3/4"	0.750	0.200	0.300	0.125	155	1200	0.105	26	35
1"	1.000	0.250	NR	0.080	155	NR	0.120	16	20
1-1/4"	1.250	0.250	NR	0.062	155	NR	0.120	10	13

Metric Cutting Data

Material Thickness	Initial Height	Pierce Height	Cutting Height	Arc Voltage	Pierce Delay	Kerf Width	Optimum Speed	Maximum Speed
mm	mm	mm	mm	Volts	msec	mm	mm/min	mm/min
6	4.8	4.8	2.2	137	75	1.9	3600	4400
8	4.8	4.8	3.2	144	200	2.1	2700	3300
10	4.8	5.0	4.0	150	300	2.3	1900	2425
12	4.8	5.8	4.0	152	300	2.5	1550	1950
14	4.8	6.1	4.0	154	350	2.6	1275	1500
15	4.8	6.1	4.0	155	375	2.7	1125	1300
16	4.8	6.2	3.9	156	425	2.8	1000	1150
18	5.0	7.1	3.4	155	950	2.7	775	975
20	5.3	NR	3.0	155	NR	2.7	625	825
25	6.3	NR	2.1	155	NR	3.0	425	525
30	6.4	NR	1.7	155	NR	3.0	300	375
32	6.4	NR	1.6	155	NR	3.0	250	325

Notes:

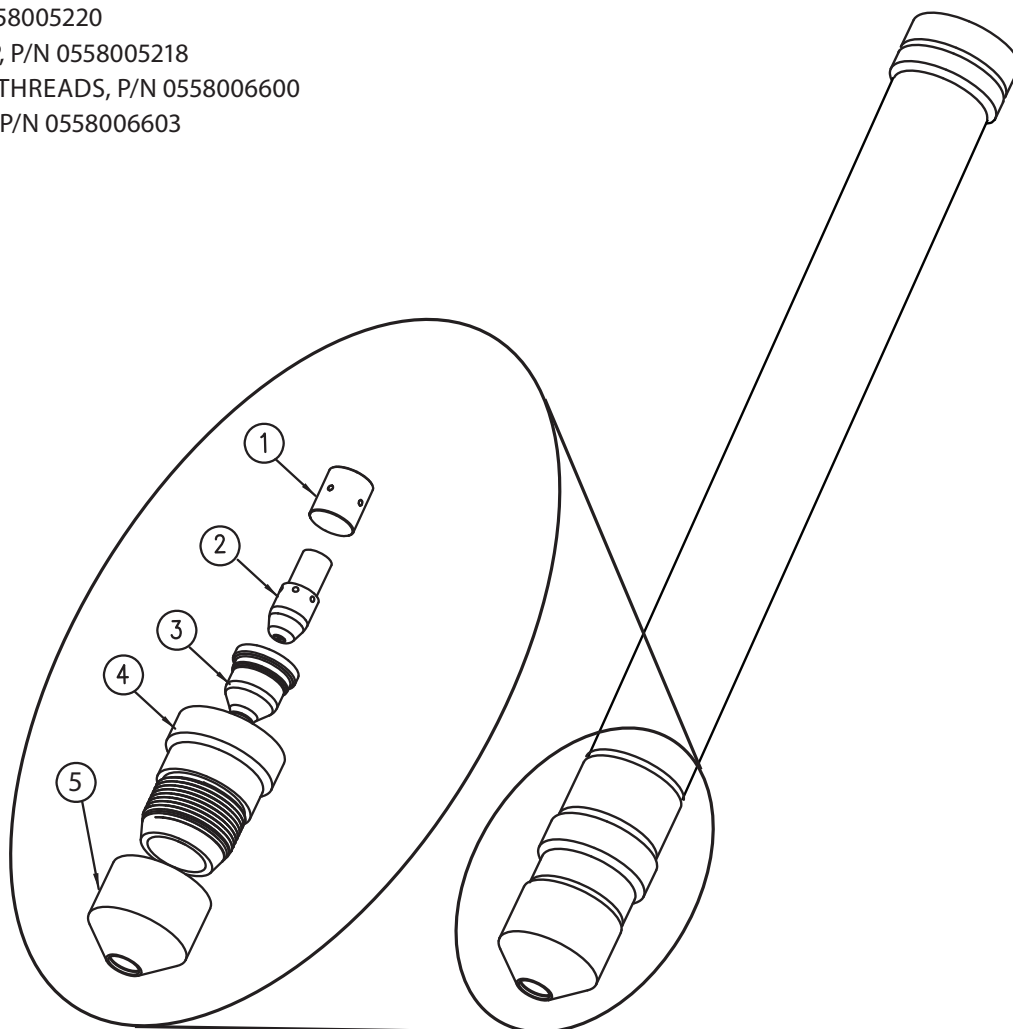
NR = Not Recommended

The published cut speeds are the result of ESAB's laboratory testing. The actual optimum and maximum cutting speeds may vary based on material composition, surface quality (rust, surface scale or primers, etc.) and various user setup parameters.

**PLASMARC™ Cutting Torch**

Material:	Aluminum
Amperes:	30 and 40
Plasma Gas:	Air @ 80 psi (5.5 bar)

1. GAS BAFFLE, P/N 0558005217
2. ELECTRODE, P/N 0558005220
3. NOZZLE, 30-40 AMP, P/N 0558005218
4. RETAINING CUP W/ THREADS, P/N 0558006600
5. SHIELD, 30-40 AMP, P/N 0558006603



PT-37 30 & 40 amp Aluminum Data

Inch cutting data

Material Thickness		Cutting Current	Initial Height	Pierce Height	Cutting Height	Arc Voltage	Pierce Delay	Kerf Width	Optimum Speed	Maximum Speed
Gauge/ Fraction	Inches	Amps	Inches	Inches	Inches	Volts	msec	Inches	IPM	IPM
20ga	0.031	30	0.156	0.156	0.062	121	0	0.035	410	645
18ga	0.040	30	0.156	0.156	0.062	123	0	0.039	350	525
16ga	0.051	30	0.156	0.156	0.062	124	0	0.041	270	410
14ga	0.063	30	0.156	0.156	0.062	126	0	0.044	190	285
12ga	0.081	40	0.156	0.156	0.090	118	0	0.045	240	330
10ga	0.102	40	0.161	0.161	0.093	121	50	0.047	170	245
1/8"	0.125	40	0.188	0.188	0.110	126	100	0.050	130	200
8ga	0.129	40	0.188	0.188	0.110	126	100	0.050	120	195
6ga	0.162	40	0.188	0.188	0.110	127	100	0.052	100	140
3/16"	0.188	40	0.188	0.188	0.110	128	100	0.054	80	100
1/4"	0.250	40	0.200	0.200	0.125	136	150	0.059	50	66

Metric Cutting Data

Material Thickness	Cutting Current	Initial Height	Pierce Height	Cutting Height	Arc Voltage	Pierce Delay	Kerf Width	Optimum Speed	Maximum Speed
mm	Amps	mm	mm	mm	Volts	msec	mm	mm/min	mm/min
0.8	30	4.0	4.0	1.6	121	0	0.9	10500	16400
0.9	30	4.0	4.0	1.6	122	0	0.9	9700	14900
1	30	4.0	4.0	1.6	123	0	1.0	8900	13300
1.5	30	4.0	4.0	1.6	126	0	1.1	5400	8200
2	40	4.0	4.0	2.3	118	0	1.1	6100	8400
2.5	40	4.0	4.0	2.3	120	50	1.2	4600	6400
3	40	4.6	4.6	2.7	124	85	1.2	3600	5400
3.5	40	4.8	4.8	2.8	126	100	1.3	3000	4600
4	40	4.8	4.8	2.8	127	100	1.3	2600	3800
5	40	4.8	4.8	2.9	129	100	1.4	1900	2550
6	40	5.0	5.0	3.1	134	150	1.5	1425	1875

The published cut speeds are the result of ESAB's laboratory testing. The actual optimum and maximum cutting speeds may vary based on material composition, surface quality (rust, surface scale or primers, etc.) and various user setup parameters.

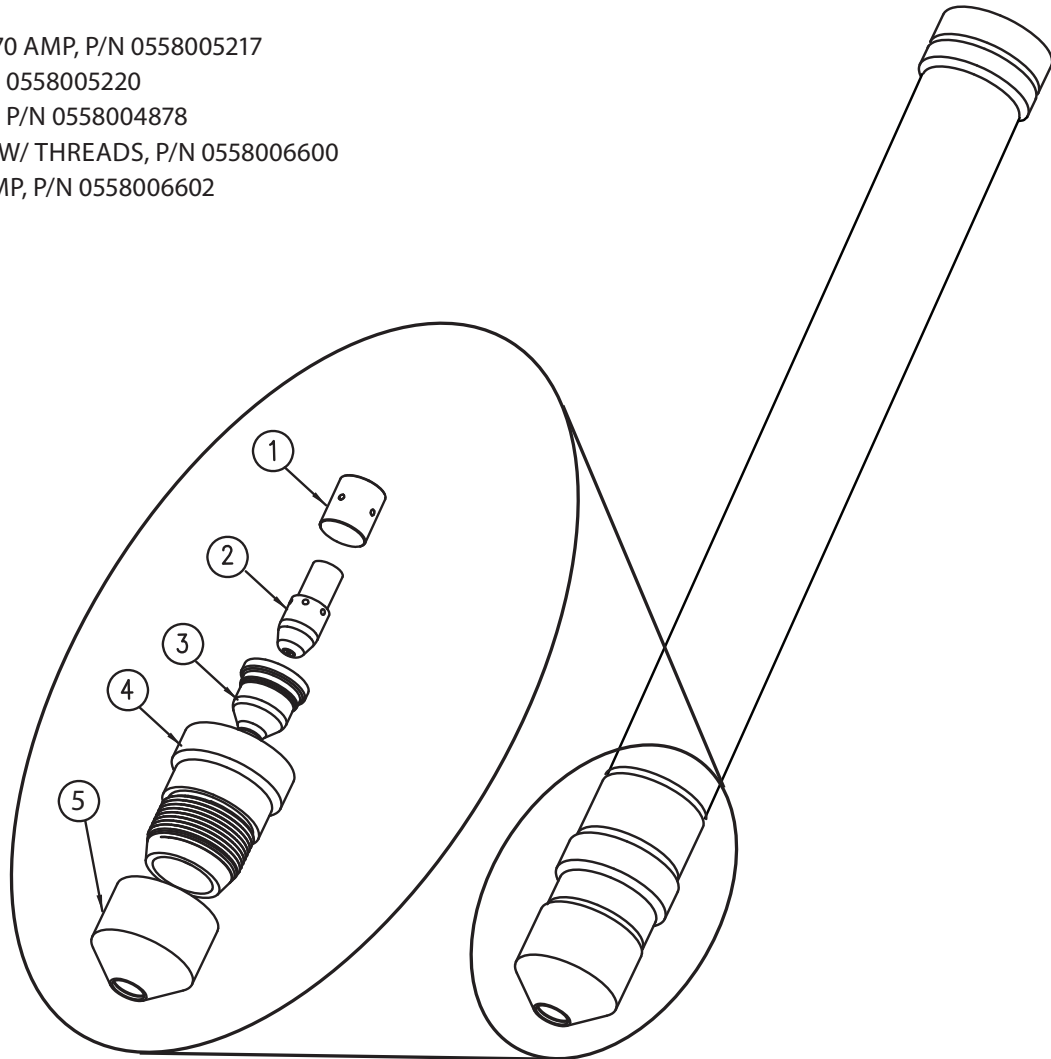


PLASMARC™ Cutting Torch
ESP-101 Plasma System

Material:	Aluminum
Amperes:	50
Plasma Gas:	Air @ 80 psi (5.5 bar) *

* See section 4.2.1

1. GAS BAFFLE 30-70 AMP, P/N 0558005217
2. ELECTRODE, P/N 0558005220
3. NOZZLE 50 AMP, P/N 0558004878
4. RETAINING CUP W/ THREADS, P/N 0558006600
5. SHIELD 50-90 AMP, P/N 0558006602



PT-37 50 amp Aluminum Data

Inch cutting data

Material Thickness		Initial Height	Pierce Height	Cutting Height	Arc Voltage	Pierce Delay	Kerf Width	Optimum Speed	Maximum Speed
Gauge/ Fraction	Inches	Inches	Inches	Inches	Volts	msec	Inches	IPM	IPM
14ga	0.062	0.200	0.200	0.050	138	50	0.064	320	450
12ga	0.081	0.200	0.200	0.053	138	80	0.064	280	385
10ga	0.102	0.200	0.200	0.056	138	100	0.065	230	315
1/8"	0.125	0.200	0.200	0.060	138	150	0.065	180	235
8ga	0.129	0.200	0.200	0.061	138	150	0.065	175	230
6ga	0.162	0.200	0.200	0.069	140	175	0.065	135	180
3/16"	0.188	0.200	0.200	0.075	141	200	0.065	100	140
1/4"	0.250	0.200	0.200	0.065	147	250	0.074	72	88
3/8"	0.375	0.200	0.250	0.062	156	350	0.074	36	50
1/2"	0.500	0.200	0.280	0.120	160	500	0.084	20	30

Metric Cutting Data

Material Thickness	Initial Height	Pierce Height	Cutting Height	Arc Voltage	Pierce Delay	Kerf Width	Optimum Speed	Maximum Speed
mm	mm	mm	mm	Volts	msec	mm	mm/min	mm/min
1.5	5.1	5.1	1.3	138	50	1.6	8300	11700
2	5.1	5.1	1.3	138	75	1.6	7200	10000
3	5.1	5.1	1.5	138	150	1.6	5000	6600
4	5.1	5.1	1.7	140	175	1.7	3500	4700
5	5.1	5.1	1.9	142	200	1.7	2400	3400
6	5.1	5.1	1.7	146	250	1.8	2000	2500
8	5.1	5.7	1.6	152	300	1.9	1350	1725
10	5.1	6.5	1.8	157	375	1.9	850	1200
12	5.1	6.9	2.7	159	450	2.1	600	875

The published cut speeds are the result of ESAB's laboratory testing. The actual optimum and maximum cutting speeds may vary based on material composition, surface quality (rust, surface scale or primers, etc.) and various user setup parameters.

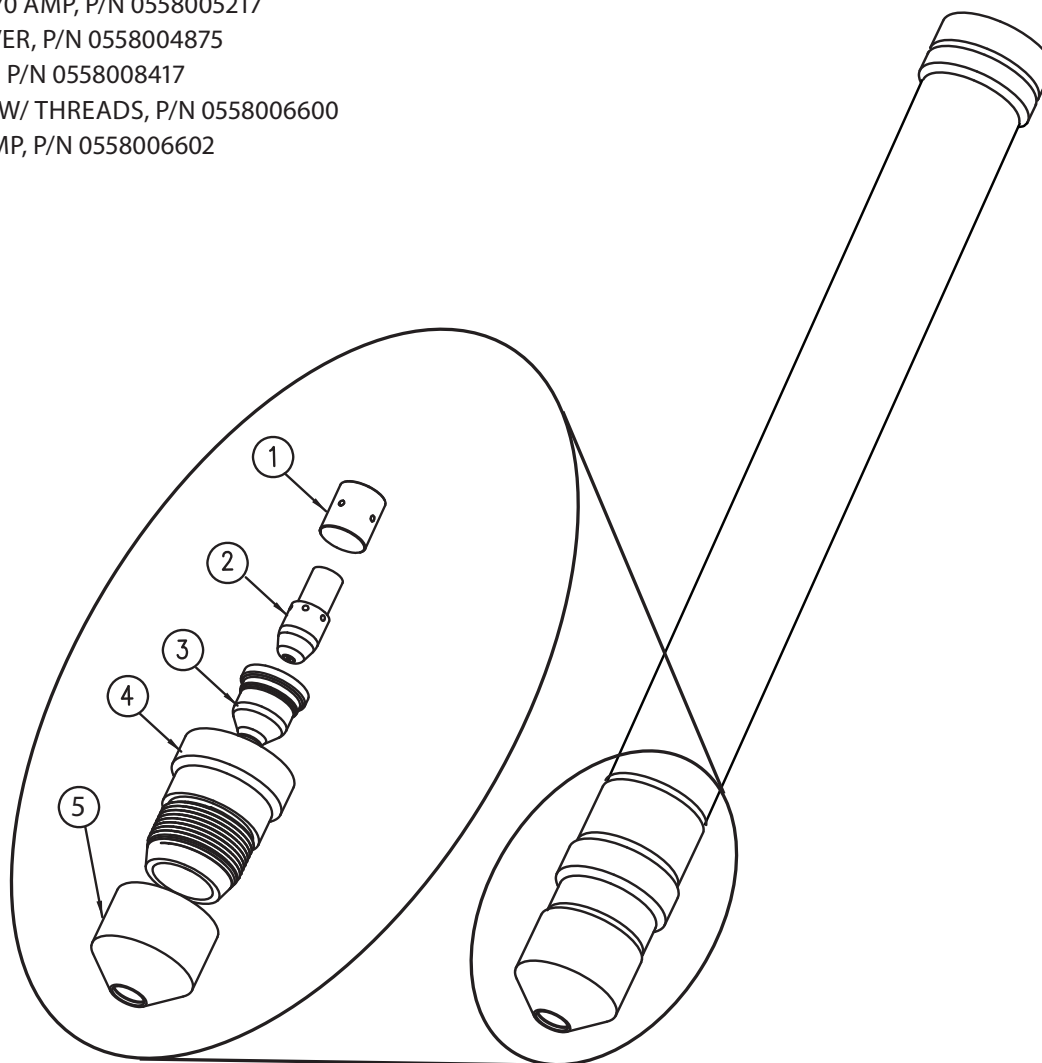


PLASMARC™ Cutting Torch
ESP-101 Plasma System

Material:	Aluminum
Amperes:	60
Plasma Gas:	Air @ 80 psi (5.5 bar) *

* See section 4.2.1

1. GAS BAFFLE 30-70 AMP, P/N 0558005217
2. ELECTRODE SILVER, P/N 0558004875
3. NOZZLE 60 AMP, P/N 0558008417
4. RETAINING CUP W/ THREADS, P/N 0558006600
5. SHIELD 50-90 AMP, P/N 0558006602



IMPORTANT !!!

Reminder for PowerCut-900 users:

Power Source Ratings: 60 Amps @ 60% duty cycle.
50 Amps @ 100% duty cycle.

The maximum output of the PowerCut 900 is 60 amps. However, if your application calls for a duty cycle greater than 60% the output should be reduced to 50 amps or less.

PT-37 60 amp Aluminum Data

Inch cutting data

Material Thickness		Initial Height	Pierce Height	Cutting Height	Arc Voltage	Pierce Delay	Kerf Width	Optimum Speed	Maximum Speed
Gauge/Fraction	Inches	Inches	Inches	Inches	Volts	msec	Inches	IPM	IPM
1/8"	0.125	0.200	0.200	0.139	142	125	0.065	230	325
8ga	0.129	0.200	0.200	0.139	142	127	0.065	220	315
6ga	0.162	0.200	0.200	0.143	145	140	0.069	175	240
3/16"	0.188	0.200	0.200	0.146	148	150	0.072	140	180
1/4"	0.250	0.200	0.200	0.087	147	250	0.076	86	125
3/8"	0.375	0.200	0.245	0.125	155	325	0.079	44	68
1/2"	0.500	0.200	0.280	0.138	159	500	0.085	27	46

Metric Cutting Data

Material Thickness	Initial Height	Pierce Height	Cutting Height	Arc Voltage	Pierce Delay	Kerf Width	Optimum Speed	Maximum Speed
mm	mm	mm	mm	Volts	msec	mm	mm/min	mm/min
3	5.1	5.1	3.5	141	125	1.6	6100	8800
4	5.1	5.1	3.6	145	150	1.7	4600	6300
5	5.1	5.1	3.5	147	150	1.8	3400	4400
6	5.1	5.1	2.5	147	225	1.9	2500	3500
8	5.1	5.7	2.7	151	300	2.0	1630	2400
10	5.1	6.4	3.2	156	350	2.0	1050	1650
12	5.1	6.9	3.4	158	450	2.1	780	1300

The published cut speeds are the result of ESAB's laboratory testing. The actual optimum and maximum cutting speeds may vary based on material composition, surface quality (rust, surface scale or primers, etc.) and various user setup parameters.

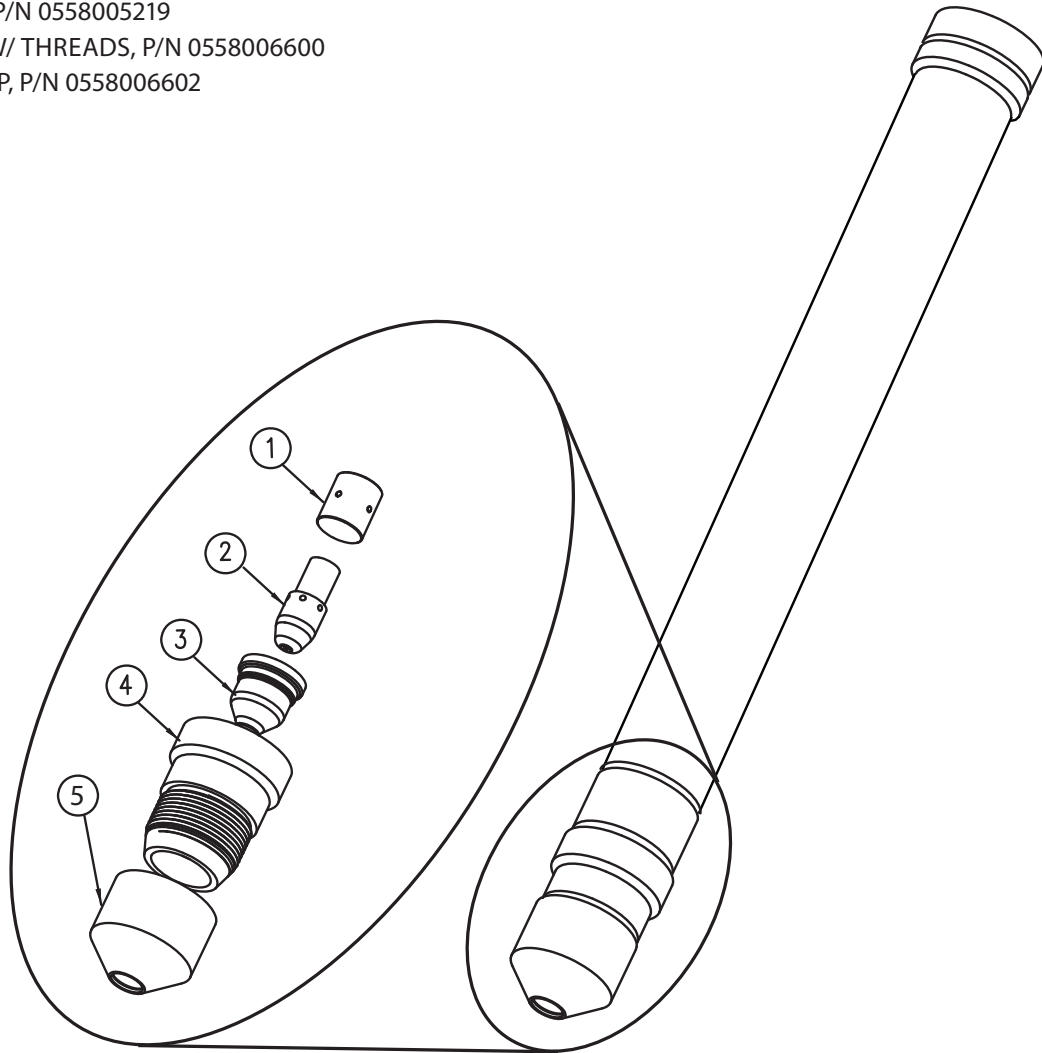


PLASMARC™ Cutting Torch
ESP-101 Plasma System

Material:	Aluminum
Amperes:	70
Plasma Gas:	Air @ 80 psi (5.5 bar) *

* See section 4.2.1

1. GAS BAFFLE 30-70 AMP, P/N 0558005217
2. ELECTRODE SILVER, P/N 0558004875
3. NOZZLE 70 AMP, P/N 0558005219
4. RETAINING CUP W/ THREADS, P/N 0558006600
5. SHIELD 50-90 AMP, P/N 0558006602



PT-37 70 amp Aluminum Data

Inch cutting data

Material Thickness		Initial Height	Pierce Height	Cutting Height	Arc Voltage	Pierce Delay	Kerf Width	Optimum Speed	Maximum Speed
Gauge/Fraction	Inches	Inches	Inches	Inches	Volts	msec	Inches	IPM	IPM
1/8"	0.125	0.200	0.200	0.217	145	100	0.065	275	410
8ga	0.129	0.200	0.200	0.217	146	100	0.066	270	400
6ga	0.162	0.200	0.200	0.217	150	100	0.073	220	300
3/16"	0.188	0.200	0.200	0.217	154	100	0.078	180	220
1/4"	0.250	0.200	0.200	0.108	146	250	0.078	100	160
3/8"	0.375	0.200	0.240	0.188	154	300	0.083	52	86
1/2"	0.500	0.200	0.280	0.156	158	500	0.085	34	62
5/8"	0.625	0.200	0.280	0.150	162	650	0.098	20	34

Metric Cutting Data

Material Thickness	Initial Height	Pierce Height	Cutting Height	Arc Voltage	Pierce Delay	Kerf Width	Optimum Speed	Maximum Speed
mm	mm	mm	mm	Volts	msec	mm	mm/min	mm/min
3	5.1	5.1	5.5	144	100	1.6	7300	10900
4	5.1	5.1	5.5	150	100	1.8	5700	7900
5	5.1	5.1	5.1	153	125	2.0	4300	5400
6	5.1	5.1	3.4	148	200	2.0	3000	4400
8	5.1	5.6	3.8	150	275	2.0	1900	3100
10	5.1	6.2	4.7	155	325	2.1	1250	2100
12	5.1	6.9	4.1	157	450	2.1	975	1700
14	5.1	7.1	3.9	160	550	2.3	725	1275
15	5.1	7.1	3.9	161	600	2.4	600	1050
16	5.1	7.1	3.8	162	650	2.5	500	825

The published cut speeds are the result of ESAB's laboratory testing. The actual optimum and maximum cutting speeds may vary based on material composition, surface quality (rust, surface scale or primers, etc.) and various user setup parameters.

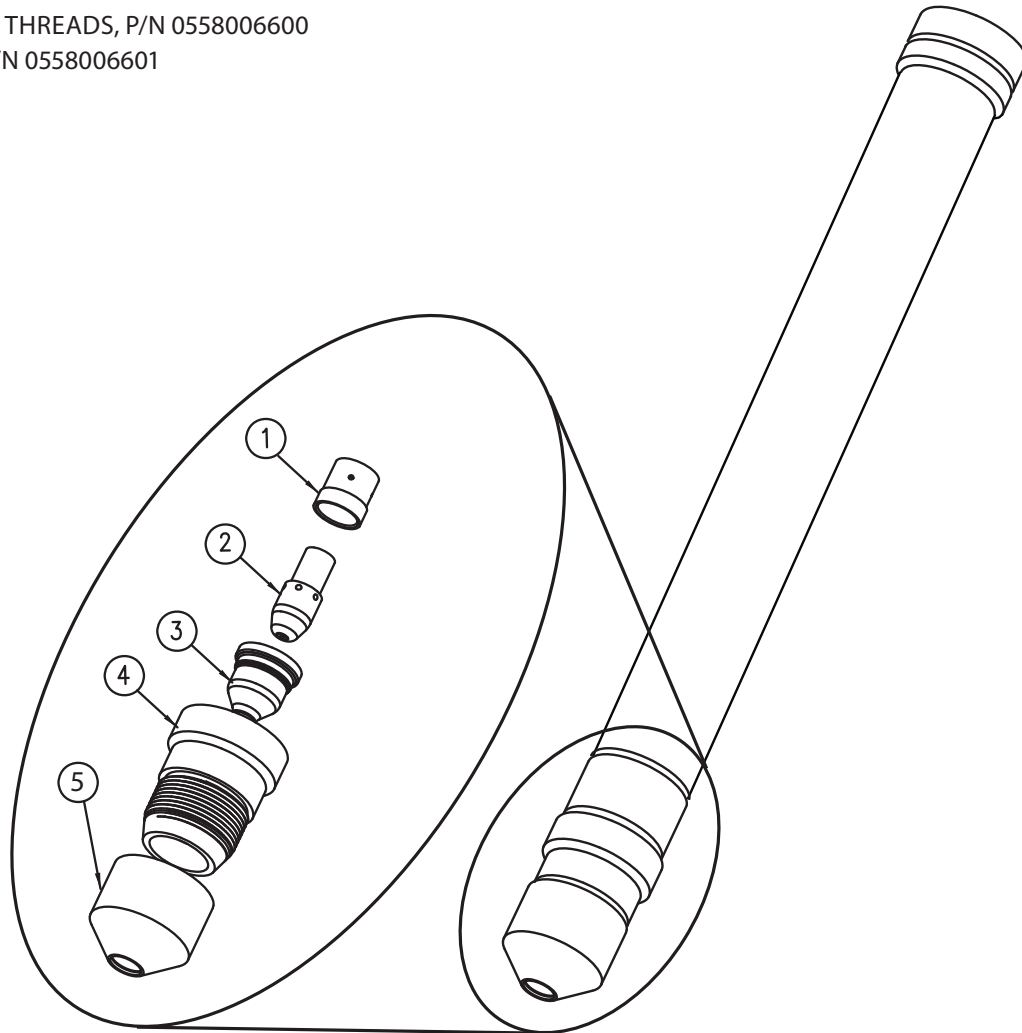


PLASMARC™ Cutting Torch
ESP-101 Plasma System

Material:	Aluminum
Amperes:	100
Plasma Gas:	Air @ 80 psi (5.5 bar) *

* See section 4.2.1

1. GAS BAFFLE 90/100 AMP, P/N 0558004870
2. ELECTRODE SILVER, P/N 0558004875
3. NOZZLE 100 AMP, P/N 0558004879
4. RETAINING CUP W/ THREADS, P/N 0558006600
5. SHIELD 100 AMP, P/N 0558006601



PT-37 100 amp Aluminum Data

Inch cutting data

Material Thickness		Initial Height	Pierce Height	Cutting Height	Arc Voltage	Pierce Delay	Kerf Width	Optimum Speed	Maximum Speed
Fraction	Inches	Inches	Inches	Inches	Volts	msec	Inches	IPM	IPM
1/4"	0.250	0.200	0.250	0.156	144	250	0.090	170	215
3/8"	0.375	0.200	0.250	0.156	154	350	0.095	95	125
1/2"	0.500	0.200	0.250	0.156	158	500	0.105	50	85
5/8"	0.625	0.200	0.250	0.156	161*	600	0.110	50	65
3/4"	0.750	0.200	0.300	0.180	162*	1300	0.115	33	50
1"	1.000	0.150	NR	0.150	162*	NR	0.125	16	24

Metric Cutting Data

Material Thickness	Initial Height	Pierce Height	Cutting Height	Arc Voltage	Pierce Delay	Kerf Width	Optimum Speed	Maximum Speed
mm	mm	mm	mm	Volts	msec	mm	mm/min	mm/min
6	5.1	6.4	4.0	143	250	2.3	4500	5700
8	5.1	6.4	4.0	149	300	2.4	3300	4300
10	5.1	6.4	4.0	155	375	2.5	2200	3000
12	5.1	6.4	4.0	157	475	2.6	1525	2375
14	5.1	6.4	4.0	159*	550	2.7	1225	1950
15	5.1	6.4	4.0	160*	575	2.8	1275	1800
16	5.1	6.4	4.0	161*	625	2.8	1250	1625
18	5.1	7.2	4.4	162*	1000	2.9	975	1400
20	4.9	8.0	4.5	162*	1500	3.0	775	1175
25	3.9	NR	3.9	162*	NR	3.2	425	650

Notes:

NR = Not Recommended

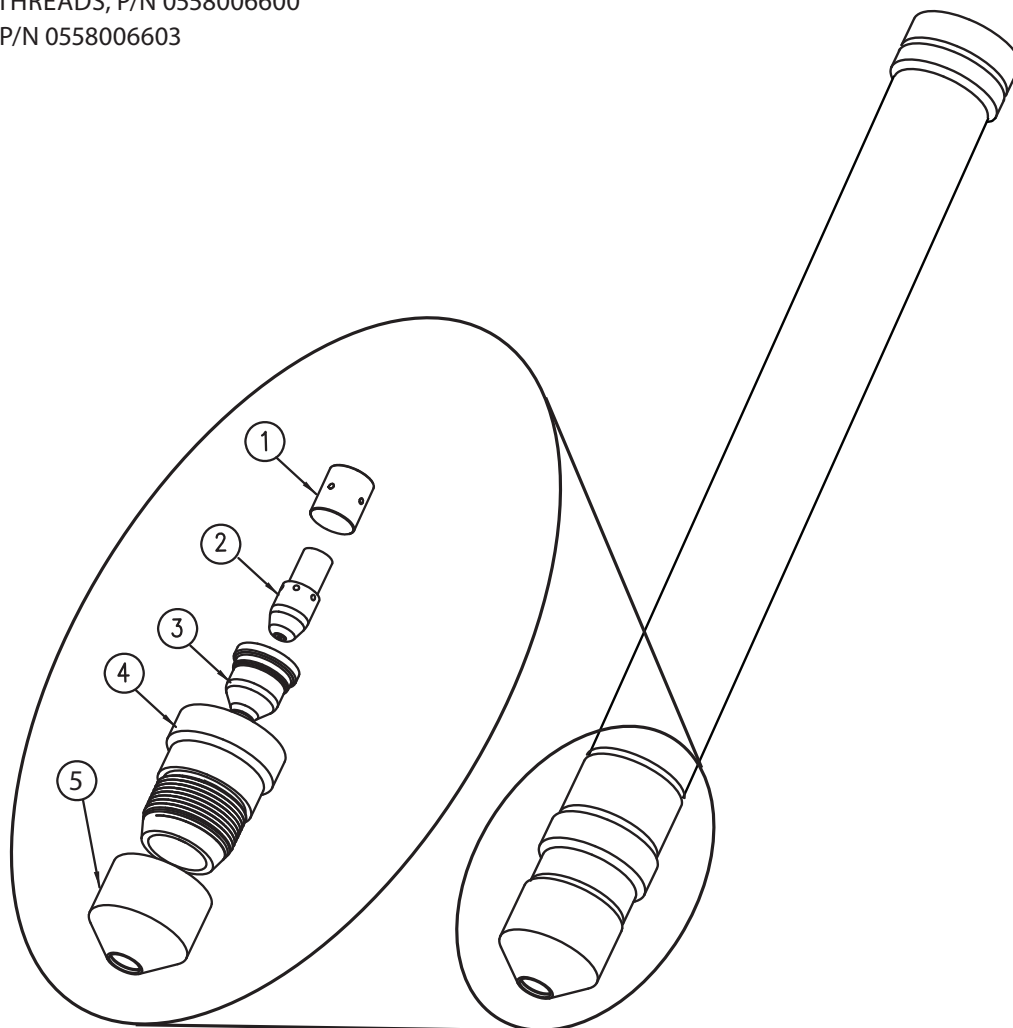
*Arc Voltage may not be achievable at input line voltages below 350 VAC.

The published cut speeds are the result of ESAB's laboratory testing. The actual optimum and maximum cutting speeds may vary based on material composition, surface quality (rust, surface scale or primers, etc.) and various user setup parameters.

**PLASMARC™ Cutting Torch**

Material:	Stainless Steel
Amperes:	30 and 40
Plasma Gas:	Air @ 85 psi (5.85 bar)

1. GAS BAFFLE, P/N 0558005217
2. ELECTRODE, P/N 0558005220
3. NOZZLE, 30-40 AMP, P/N 0558005218
4. RETAINING CUP W/ THREADS, P/N 0558006600
5. SHIELD, 30-40 AMP, P/N 0558006603



PT-37 30 & 40 amp Stainless Steel Data

Inch cutting data

Material Thickness		Cutting Current	Initial Height	Pierce Height	Cutting Height	Arc Voltage	Pierce Delay	Kerf Width	Optimum Speed	Maximum Speed
Gauge/ Fraction	Inches	Amps	Inches	Inches	Inches	Volts	msec	Inches	IPM	IPM
26ga	0.019	30	0.156	0.156	0.078	127	0	0.030	415	635
24ga	0.025	30	0.156	0.156	0.078	128	0	0.031	375	560
22ga	0.031	30	0.156	0.156	0.078	128	0	0.031	340	480
20ga	0.038	30	0.156	0.156	0.078	129	0	0.032	300	390
18ga	0.050	40	0.156	0.156	0.090	120	0	0.038	335	590
16ga	0.063	40	0.156	0.156	0.090	118	0	0.040	245	375
1/16"										
14ga	0.078	40	0.156	0.156	0.090	119	0	0.045	145	220
12ga	0.109	40	0.171	0.171	0.090	123	75	0.050	100	155
11ga	0.125	40	0.188	0.188	0.090	126	100	0.055	75	115
1/8"										
10ga	0.140	40	0.188	0.188	0.090	126	100	0.056	68	100
8ga	0.172	40	0.188	0.188	0.090	128	100	0.057	52	79
3/16"	0.188	40	0.188	0.188	0.090	128	100	0.058	44	67
6ga	0.203	40	0.191	0.191	0.091	129	100	0.060	41	62
4ga	0.234	40	0.197	0.197	0.093	133	100	0.063	33	51
3ga	0.250	40	0.200	0.200	0.094	134	100	0.065	30	46
1/4"										

Metric Cutting Data

Material Thickness	Cutting Current	Initial Height	Pierce Height	Cutting Height	Arc Voltage	Pierce Delay	Kerf Width	Optimum Speed	Maximum Speed
mm	Amps	mm	mm	mm	Volts	msec	mm	mm/min	mm/min
0.6	30	4.0	4.0	2.0	127	0	0.8	9800	14700
0.7	30	4.0	4.0	2.0	128	0	0.8	9200	13400
0.8	30	4.0	4.0	2.0	128	0	0.8	8700	12200
0.9	30	4.0	4.0	2.0	129	0	0.8	8000	10800
1	30	4.0	4.0	2.0	129	0	0.8	7400	9500
1.5	40	4.0	4.0	2.3	119	0	1.0	6800	11000
2	40	4.0	4.0	2.3	119	0	1.1	3700	5600
2.5	40	4.1	4.1	2.3	122	50	1.2	3000	4600
3	40	4.6	4.6	2.3	125	100	1.3	2200	3300
3.5	40	4.8	4.8	2.3	126	100	1.4	1750	2650
4	40	4.8	4.8	2.3	127	100	1.4	1500	2275
5	40	4.8	4.8	2.3	129	100	1.5	1075	1625
6	40	5.0	5.0	2.4	133	100	1.6	850	1300
6.5	40	5.1	5.1	2.4	135	100	1.7	725	1125

The published cut speeds are the result of ESAB's laboratory testing. The actual optimum and maximum cutting speeds may vary based on material composition, surface quality (rust, surface scale or primers, etc.) and various user setup parameters.

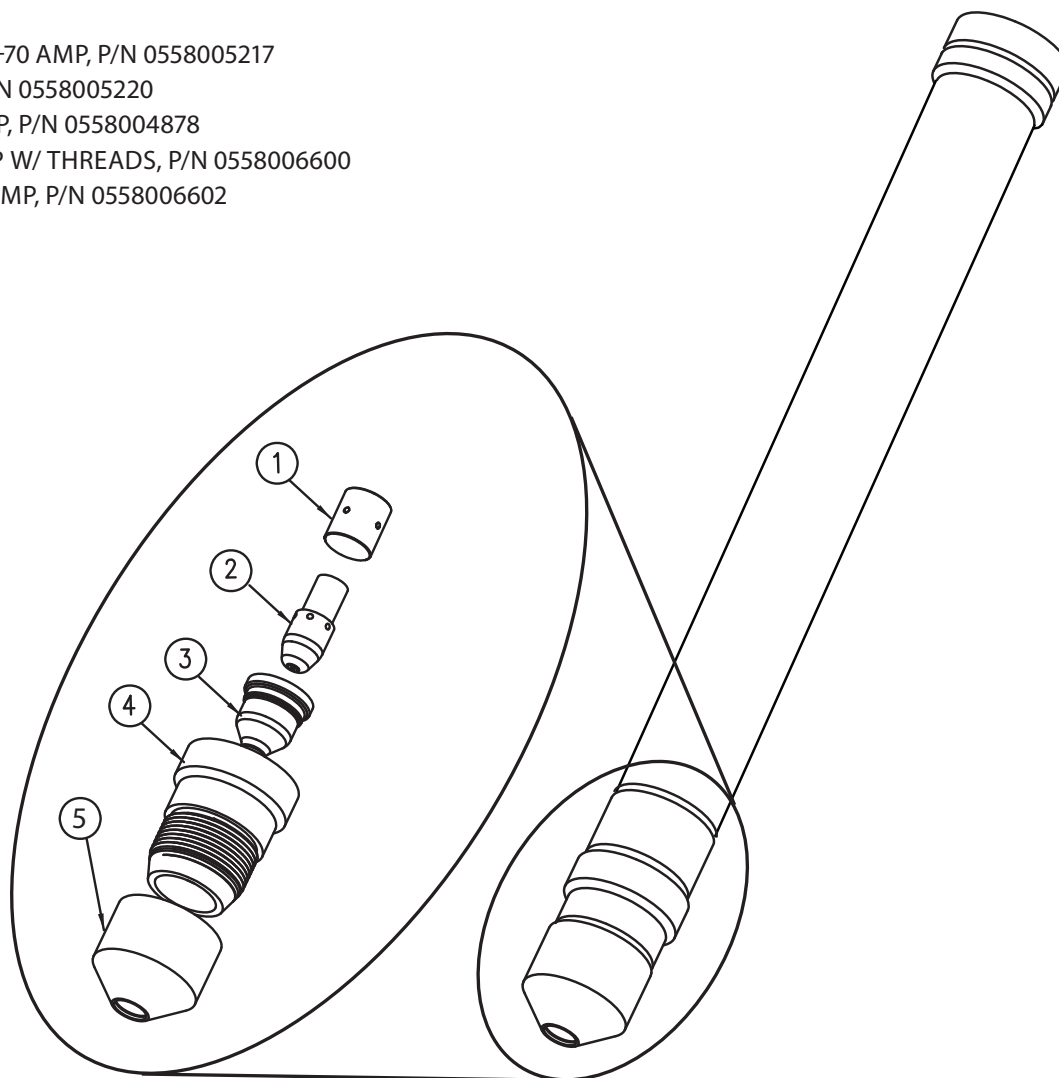


PLASMARC™ Cutting Torch
ESP-101 Plasma System

Material:	Stainless Steel
Amperes:	50
Plasma Gas:	Air @ 70 psi (4.8 bar) *

* See section 4.2.1

1. GAS BAFFLE 30-70 AMP, P/N 0558005217
2. ELECTRODE, P/N 0558005220
3. NOZZLE 50 AMP, P/N 0558004878
4. RETAINING CUP W/ THREADS, P/N 0558006600
5. SHIELD 50-90 AMP, P/N 0558006602



PT-37 50 amp Stainless Steel Data

Inch cutting data

Material Thickness		Initial Height	Pierce Height	Cutting Height	Arc Voltage	Pierce Delay	Kerf Width	Optimum Speed	Maximum Speed
Gauge/ Fraction	Inches	Inches	Inches	Inches	Volts	msec	Inches	IPM	IPM
16ga 1/16"	0.063	0.200	0.200	0.110	125	50	0.042	300	450
14ga	0.078	0.200	0.200	0.108	125	75	0.048	225	330
12ga	0.109	0.200	0.200	0.107	126	150	0.061	130	190
11ga 1/8"	0.125	0.200	0.200	0.110	128	200	0.067	110	160
10ga	0.140	0.200	0.200	0.114	129	200	0.067	98	145
8ga	0.172	0.200	0.200	0.121	131	200	0.067	72	100
3/16"	0.188	0.200	0.200	0.125	132	200	0.067	60	85
6ga	0.203	0.200	0.200	0.121	132	200	0.068	55	78
4ga	0.234	0.200	0.200	0.114	132	200	.0-69	45	62
3ga 1/4"	0.250	0.200	0.200	0.110	132	200	0.070	40	55
3/8"	0.375	0.200	0.240	0.090	135	350	0.068	20	30
1/2"	0.500	0.200	0.240	0.125	144	500	0.091	12	18

Metric Cutting Data

Material Thickness	Initial Height	Pierce Height	Cutting Height	Arc Voltage	Pierce Delay	Kerf Width	Optimum Speed	Maximum Speed
mm	mm	mm	mm	Volts	msec	mm	mm/min	mm/min
1.5	5.1	5.1	2.8	125	50	1.0	8000	12100
2	5.1	5.1	2.7	125	75	1.2	5700	8400
2.5	5.1	5.1	2.7	125	100	1.4	3700	5200
3	5.1	5.1	2.8	127	175	1.6	3000	4400
3.5	5.1	5.1	2.9	129	200	1.7	2500	3700
4	5.1	5.1	3.0	130	200	1.7	2100	3100
5	5.1	5.1	3.1	132	200	1.7	1450	2050
6	5.1	5.1	2.9	132	200	1.8	1150	1575
8	5.1	5.6	2.5	134	275	1.8	750	1075
10	5.1	6.1	2.4	136	375	1.8	475	725
12	5.1	6.1	3.0	142	450	2.2	350	525

Notes:

Note 1 - Rise = 25 milliseconds

NR = Not Recommended

The published cut speeds are the result of ESAB's laboratory testing. The actual optimum and maximum cutting speeds may vary based on material composition, surface quality (rust, surface scale or primers, etc.) and various user setup parameters.

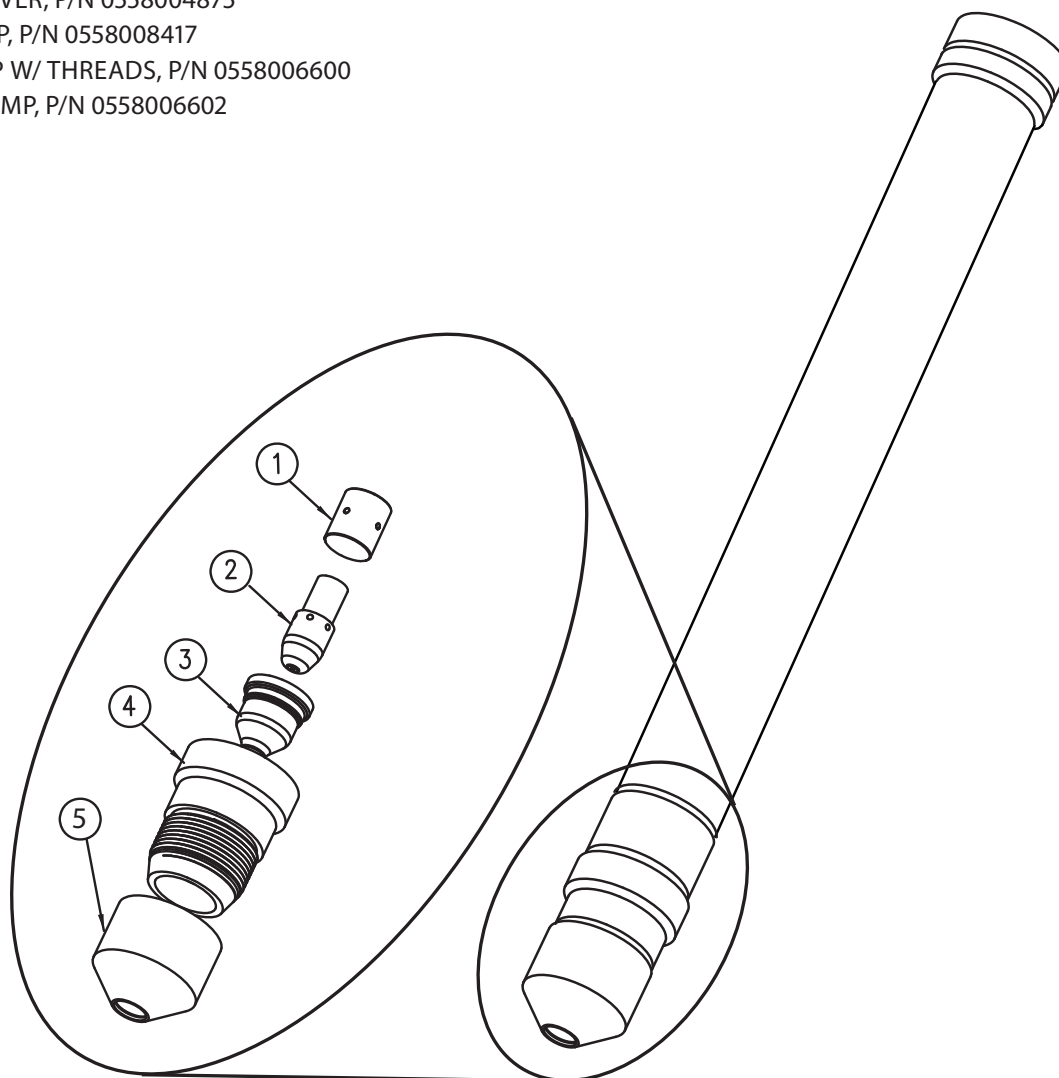


PLASMARC™ Cutting Torch
ESP-101 Plasma System

Material:	Stainless Steel
Amperes:	60
Plasma Gas:	Air @ 70 psi (4.8 bar) *

* See section 4.2.1

1. GAS BAFFLE 30-70 AMP, P/N 0558005217
2. ELECTRODE SILVER, P/N 0558004875
3. NOZZLE 60 AMP, P/N 0558008417
4. RETAINING CUP W/ THREADS, P/N 0558006600
5. SHIELD 50-90 AMP, P/N 0558006602



IMPORTANT !!!

Reminder for PowerCut-900 users:

Power Source Ratings: 60 Amps @ 60% duty cycle.
50 Amps @ 100% duty cycle.

The maximum output of the PowerCut 900 is 60 amps. However, if your application calls for a duty cycle greater than 60% the output should be reduced to 50 amps or less.

PT-37 60 amp Stainless Steel Data

Inch cutting data

Material Thickness		Initial Height	Pierce Height	Cutting Height	Arc Voltage	Pierce Delay	Kerf Width	Optimum Speed	Maximum Speed
Gauge/ Fraction	Inches	Inches	Inches	Inches	Volts	msec	Inches	IPM	IPM
11ga 1/8"	0.125	0.200	0.200	0.145	134	150	0.062	140	250
10ga	0.14	0.200	0.200	0.148	135	150	0.063	125	230
8ga	0.172	0.200	0.200	0.154	138	175	0.065	100	180
3/16"	0.1875	0.200	0.200	0.158	140	200	0.066	90	155
6ga	0.203	0.200	0.200	0.157	141	200	0.068	82	135
4ga	0.2344	0.200	0.200	0.156	143	200	0.072	66	100
3ga 1/4"	0.25	0.200	0.200	0.155	144	225	0.072	58	78
3/8"	0.375	0.200	0.240	0.154	142	375	0.074	32	43
1/2"	0.5	0.200	0.260	0.163	149	550	0.089	19	27

Metric Cutting Data

Material Thickness	Initial Height	Pierce Height	Cutting Height	Arc Voltage	Pierce Delay	Kerf Width	Optimum Speed	Maximum Speed
mm	mm	mm	mm	Volts	msec	mm	mm/min	mm/min
3	5.1	5.1	3.7	133	100	1.5	3700	6800
4	5.1	5.1	3.8	137	150	1.6	2900	5200
5	5.1	5.1	4.0	140	200	1.7	2200	3600
6	5.1	5.1	4.0	143	200	1.8	1675	2500
8	5.1	5.6	3.9	143	300	1.9	1125	1500
10	5.1	6.2	3.9	143	400	1.9	760	1030
12	5.1	6.5	4.1	147	500	2.2	550	770

Notes:

Note 1 - Rise = 25 milliseconds

NR = Not Recommended

The published cut speeds are the result of ESAB's laboratory testing. The actual optimum and maximum cutting speeds may vary based on material composition, surface quality (rust, surface scale or primers, etc.) and various user setup parameters.

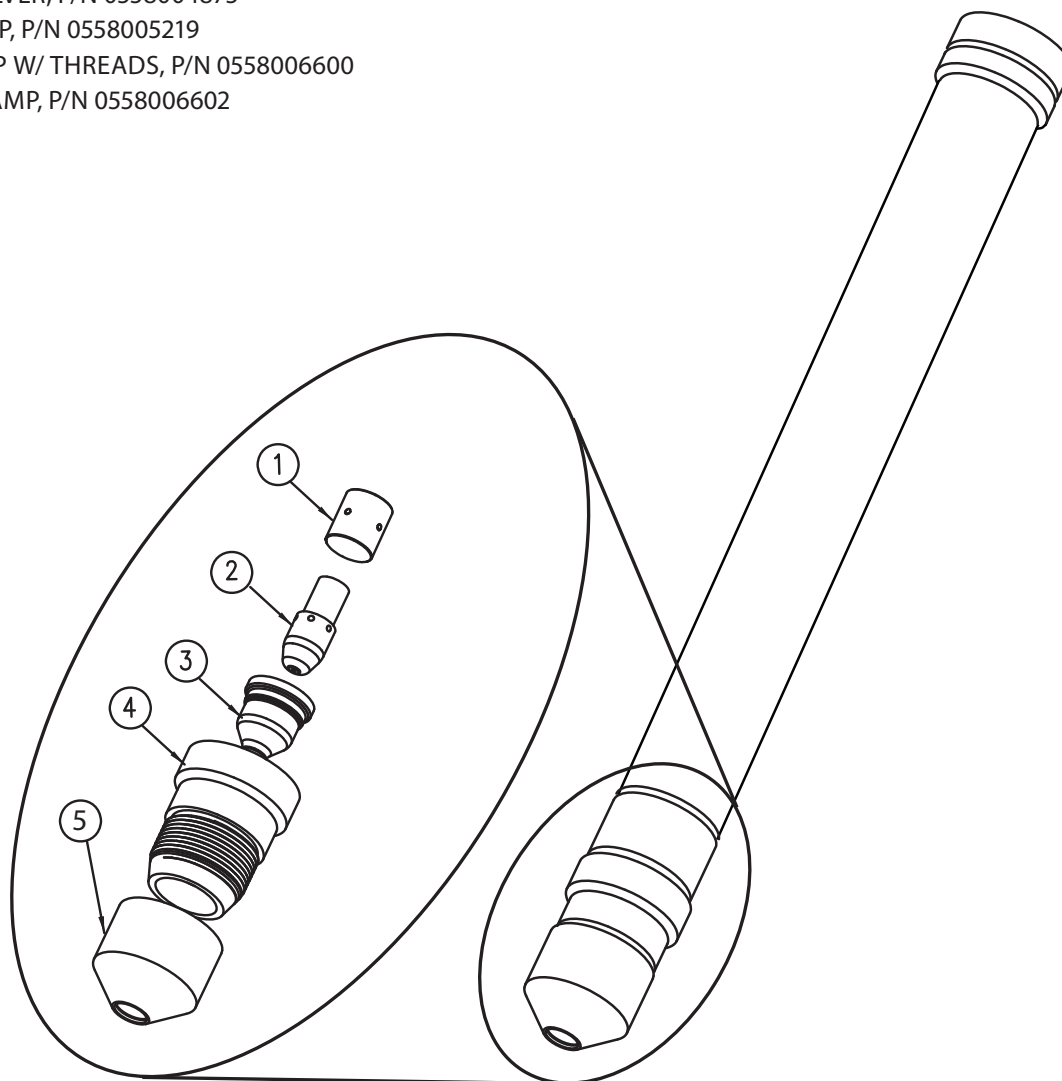


PLASMARC™ Cutting Torch
ESP-101 Plasma System

Material:	Stainless Steel
Amperes:	70
Plasma Gas:	Air @ 90 psi (6.2 bar) *

* See section 4.2.1

1. GAS BAFFLE 30-70 AMP, P/N 0558005217
2. ELECTRODE SILVER, P/N 0558004875
3. NOZZLE 70 AMP, P/N 0558005219
4. RETAINING CUP W/ THREADS, P/N 0558006600
5. SHIELD 50-90 AMP, P/N 0558006602



PT-37 70 amp Stainless Steel Data

Inch cutting data

Material Thickness		Initial Height	Pierce Height	Cutting Height	Arc Voltage	Pierce Delay	Kerf Width	Optimum Speed	Maximum Speed
Gauge/ Fraction	Inches	Inches	Inches	Inches	Volts	msec	Inches	IPM	IPM
11ga 1/8"	0.125	0.200	0.200	0.180	139	100	0.057	165	350
10ga	0.140	0.200	0.200	0.182	141	125	0.059	155	320
8ga	0.172	0.200	0.200	0.188	145	150	0.063	130	255
3/16"	0.188	0.200	0.200	0.190	148	175	0.066	120	225
6ga	0.203	0.200	0.200	0.192	150	200	0.068	110	195
4ga	0.234	0.200	0.200	0.198	154	225	0.072	87	130
3ga 1/4"	0.250	0.200	0.200	0.200	156	250	0.074	76	100
3/8"	0.375	0.200	0.240	0.217	148	400	0.080	44	56
1/2"	0.500	0.200	0.280	0.200	154	600	0.086	26	35
5/8"	0.625	0.200	NR	0.156	156	NR	0.086	19	26
3/4"	0.750	0.200	NR	0.170	162	NR	0.100	13	16

Metric Cutting Data

Material Thickness	Initial Height	Pierce Height	Cutting Height	Arc Voltage	Pierce Delay	Kerf Width	Optimum Speed	Maximum Speed
mm	mm	mm	mm	Volts	msec	mm	mm/min	mm/min
3	5.1	5.1	4.5	138	100	1.4	4300	9200
4	5.1	5.1	4.7	143	125	1.6	3600	7200
5	5.1	5.1	4.9	149	200	1.7	2900	5200
6	5.1	5.1	5.0	154	225	1.8	2200	3300
8	5.1	5.6	5.3	152	325	2.0	1500	1950
10	5.1	6.2	5.4	149	425	2.1	1050	1350
12	5.1	6.9	5.2	153	550	2.2	750	1000
14	5.1	NR	4.6	155	NR	2.2	575	800
15	5.1	NR	4.3	155	NR	2.2	525	725
16	5.1	NR	4.0	156	NR	2.2	475	650
18	5.1	NR	4.2	160	NR	2.4	375	500
20	5.1	NR	4.4	164	NR	2.6	285	330

Notes:

NR = Not Recommended

The published cut speeds are the result of ESAB's laboratory testing. The actual optimum and maximum cutting speeds may vary based on material composition, surface quality (rust, surface scale or primers, etc.) and various user setup parameters.

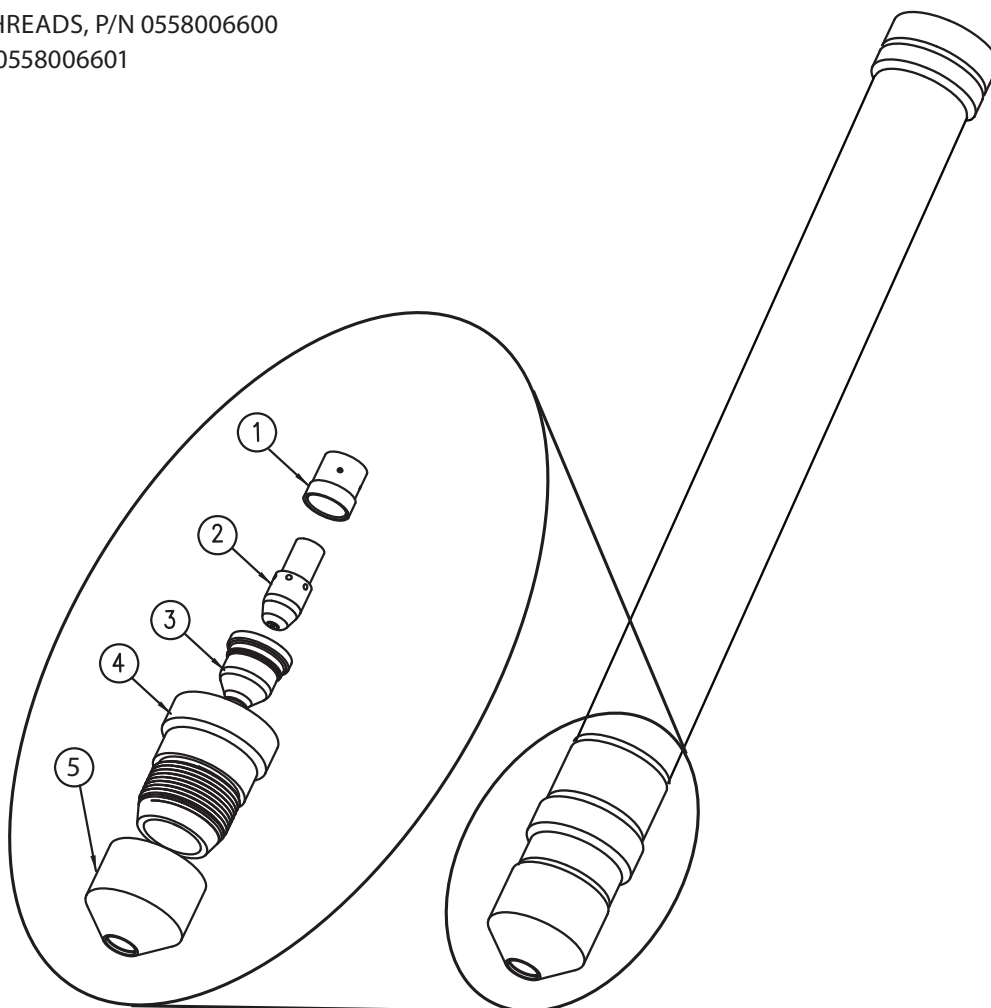


PLASMARC™ Cutting Torch
ESP-101 Plasma System

Material:	Stainless Steel
Amperes:	100
Plasma Gas:	Air @ 80 psi (5.5 bar) *

* See section 4.2.1

1. GAS BAFFLE 90/100 AMP, P/N 0558004870
2. ELECTRODE SILVER, P/N 0558004875
3. NOZZLE 100 AMP, P/N 0558004879
4. RETAINING CUP W/ THREADS, P/N 0558006600
5. SHIELD 100 AMP, P/N 0558006601



PT-37 100 amp Stainless Steel Data

Inch cutting data

Material Thickness		Initial Height	Pierce Height	Cutting Height	Arc Voltage	Pierce Delay	Kerf Width	Optimum Speed	Maximum Speed
Gauge/ Fraction	Inches	Inches	Inches	Inches	Volts	msec	Inches	IPM	IPM
4ga	0.234	0.200	0.240	0.078	135	300	0.066	160	210
3ga 1/4"	0.250	0.200	0.240	0.077	135	300	0.068	150	200
3/8"	0.375	0.200	0.240	0.072	139	350	0.085	75	100
1/2"	0.500	0.200	0.240	0.156	152	600	0.100	45	56
5/8"	0.625	0.200	0.280	0.120	152	950	0.104	26	35
3/4"	0.750	0.188	NR	0.188	156	NR	0.092	18	24
1"	1.000	0.110	NR	0.110	156	NR	0.102	15	22
1-1/4"	1.250	0.110	NR	0.110	161*	NR	0.105	8	12

Metric Cutting Data

Material Thickness	Initial Height	Pierce Height	Cutting Height	Arc Voltage	Pierce Delay	Kerf Width	Optimum Speed	Maximum Speed
mm	mm	mm	mm	Volts	msec	mm	mm/min	mm/min
6	5.1	6.1	2.0	135	300	1.7	4000	5400
8	5.1	6.1	1.9	137	325	2.0	2800	3800
10	5.1	6.1	2.1	141	400	2.2	1800	2375
12	5.1	6.1	3.5	149	550	2.5	1300	1675
14	5.1	6.5	3.6	152	750	2.6	950	1204
15	5.1	6.8	3.3	152	850	2.6	800	1036
16	5.1	NR	3.1	152	NR	2.6	650	878
18	4.9	NR	4.2	155	NR	2.4	525	702
20	4.5	NR	4.5	156	NR	2.4	450	600
25	2.9	NR	2.9	156	NR	2.6	390	560
30	2.8	NR	2.8	160*	NR	2.6	250	375
32	2.8	NR	2.8	161*	NR	2.7	200	300

Notes:

NR = Not Recommended

*Arc Voltage may not be achievable at input line voltages below 350 VAC.

The published cut speeds are the result of ESAB's laboratory testing. The actual optimum and maximum cutting speeds may vary based on material composition, surface quality (rust, surface scale or primers, etc.) and various user setup parameters.

WARNING

BEFORE ANY MAINTENANCE IS ATTEMPTED ON THIS TORCH, MAKE SURE THE POWER SWITCH ON THE CONSOLE IS IN THE OFF POSITION AND THE PRIMARY INPUT POWER IS DEENERGIZED.

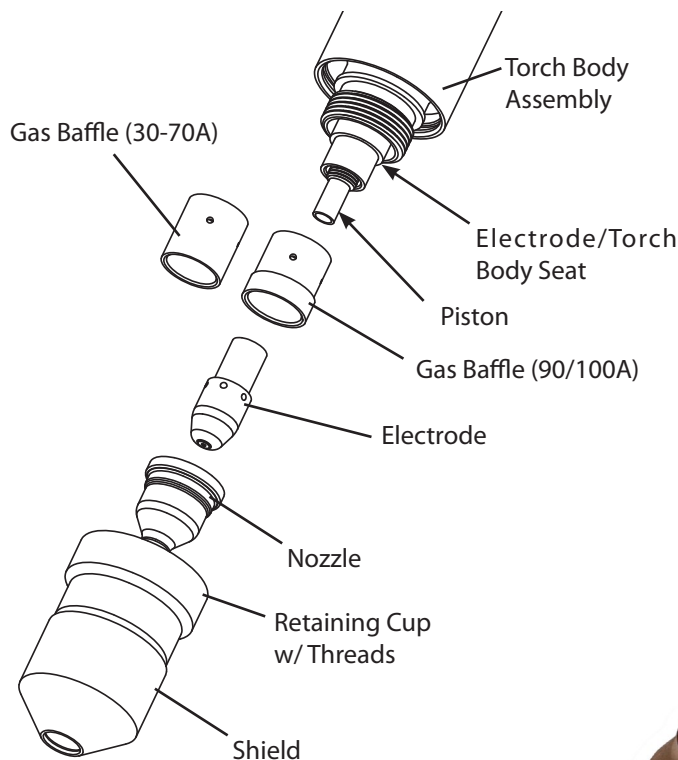
5.0 General

- A. Periodically check torch head assembly. Replace if worn or damaged.
- B. Torch cable should be inspected periodically. If there are any cuts through the protective sheath or wire insulation, replace the cable.

5.1 Dirt or Contamination

Dirt or other contamination in the torch and loose consumable parts can cause premature failure of the PT-37 Torch through internal arcing. To avoid this, users are instructed to do the following: Ensure that clean, dry, and oil-free air is being used. Wipe the retaining cup clean with a cloth before installing each fresh set of consumables. The ability of the retaining cup to resist arc tracking over its surface is reduced when dirt or other contamination is allowed to collect there.

5.2 Inspection, Cleaning and Replacement of Consumables



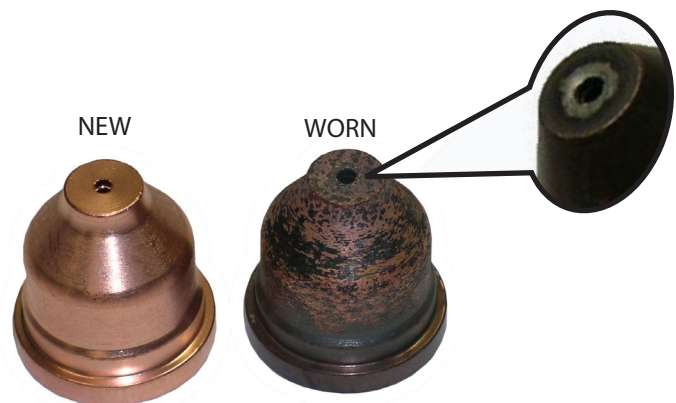
1. Bring torch to a position where it is easily accessed by machine operator, in its normal vertical position.
2. Unscrew the retaining cup and lower it away from the torch, allowing nozzle to remain with retaining cup.

Note:

The nozzle and electrode will generally wear at the same rate. For best performance, replace together.

Note:

When inspecting consumables visually check torch body assembly. Replace torch body assembly if worn or damaged.



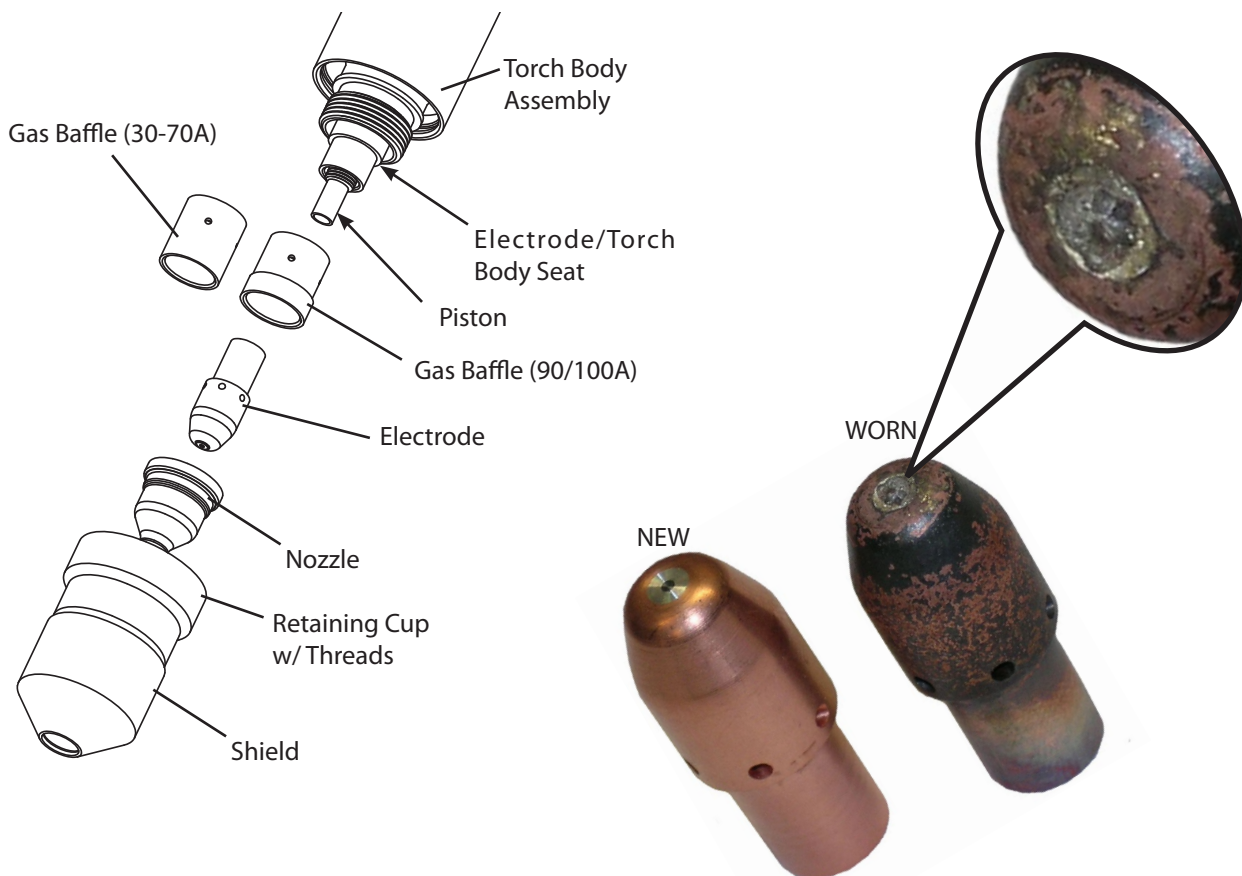
CAUTION

REPLACE ELECTRODE BEFORE WEAR BECOMES DEEPER THAN .060" INCH (1.5 MM).

3. Remove the nozzle by tilting retaining cup upside down and pushing nozzle out. Inspect nozzle for wear. The nozzle orifice should be round at both the entrance and the exit. If the nozzle orifice is worn in an oval shape or shows other signs of damage at either end, it should be replaced. The inside of the nozzle may have light gray deposits from the electrode. These may be removed with steel wool but care must be taken to remove all traces of the steel wool afterward.
4. If the electrode has a pit which is more than .06" (1.5mm) deep at its center, it must be replaced. This is done by unscrewing the electrode in a counter-clockwise direction from the piston. If the electrode is used beyond this recommended wear limit, damage to the torch and power source may occur. Nozzle life is also greatly reduced when using the electrode below the recommended limit.

Note:

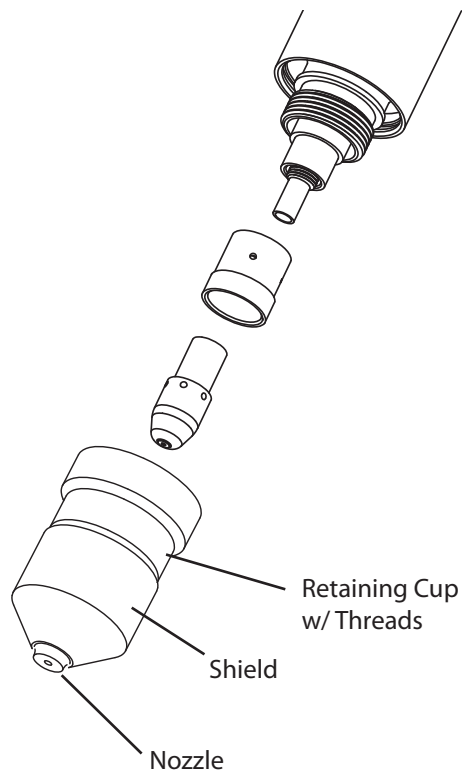
Gas baffle and retaining/shield cup need to be replaced only if cracked or significant signs of wear are noticeable. Monthly replacement is generally a good practice.



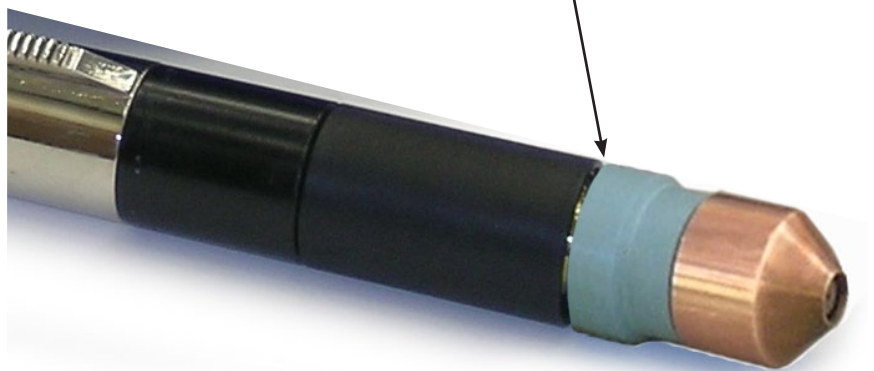
5. Remove the gas baffle. Inspect it and the piston for signs of damage such as arc tracking or cracking and replace them if necessary.
6. After installing the gas baffle onto the torch body assembly, install electrode by screwing clockwise into place.
7. Lastly, replace the nozzle and retaining/shield cup by screwing clockwise into place.

Note:

Firm tightening of the electrode by hand is sufficient, the use of tools such as wrenches or pliers is not required or recommended.

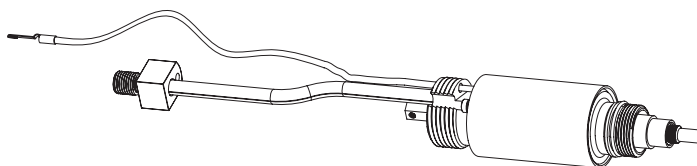
**Note:**

After installing the retaining cup and nozzle assembly, check for fit and alignment. A gap between the retaining cup and the torch body assembly is normal.



WARNING

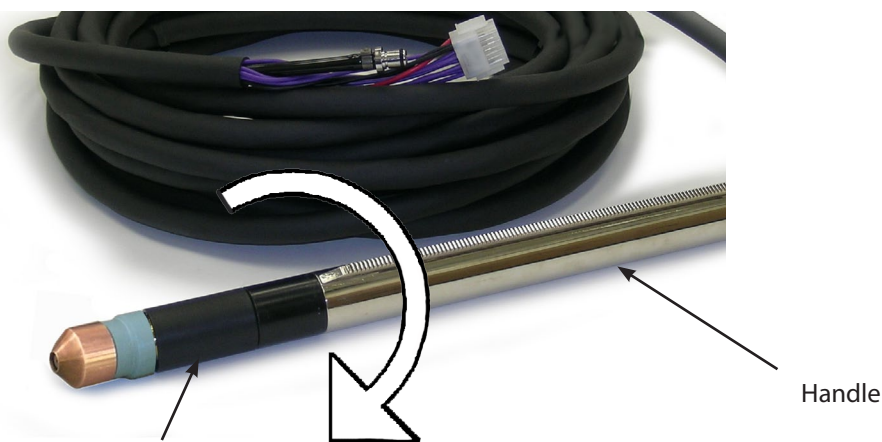
MAKE SURE THAT THE POWER SOURCE HAS BEEN TURNED OFF AND THAT PRIMARY POWER HAS BEEN DISCONNECTED BEFORE PROCEEDING.

5.3 Removal / Replacement of Torch Body

1. Unscrew the handle from the torch body assembly. Pull handle back onto the torch cable assembly to expose the torch connections.

Note:

Replacement of the torch consumables is recommended when replacing the torch body.



Grasp torch body assembly in this area and hold securely, twist handle in direction shown

Figure 5-1.

2. Remove the electrical tape wrapped around the torch sleeving to access the tubing on the pilot arc (blue) cable (See figure 5-2). Move the tubing to expose the pilot arc knife connection.

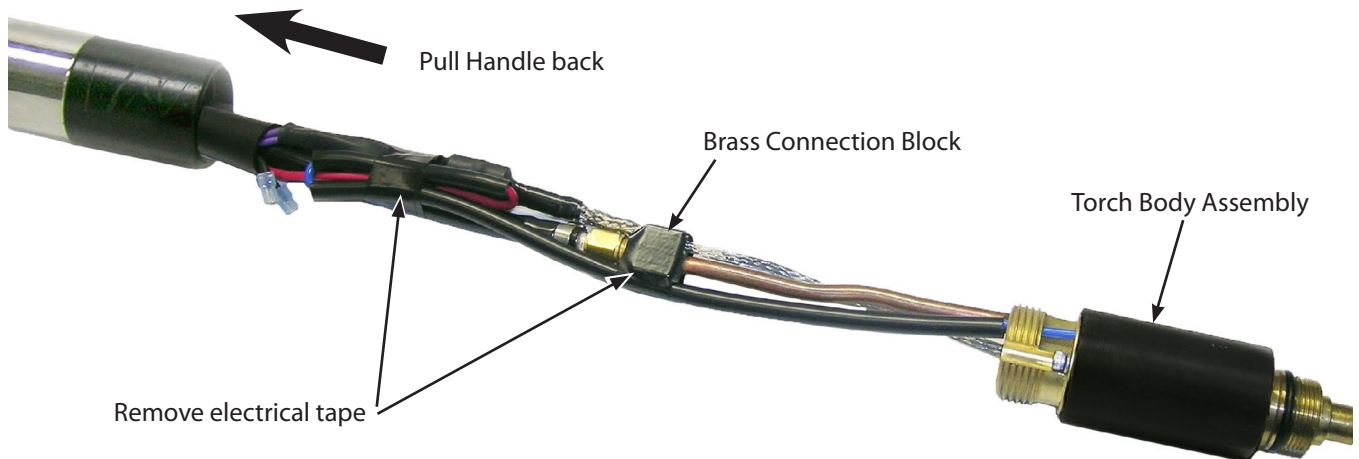


Figure 5-2.

3. Disconnect gas hose connection by using a 7/16" (11 mm) and 9/16" (14 mm) wrench. Hold the brass connection block wrench steady while twisting the hose connector wrench as shown (See figure 5-3).

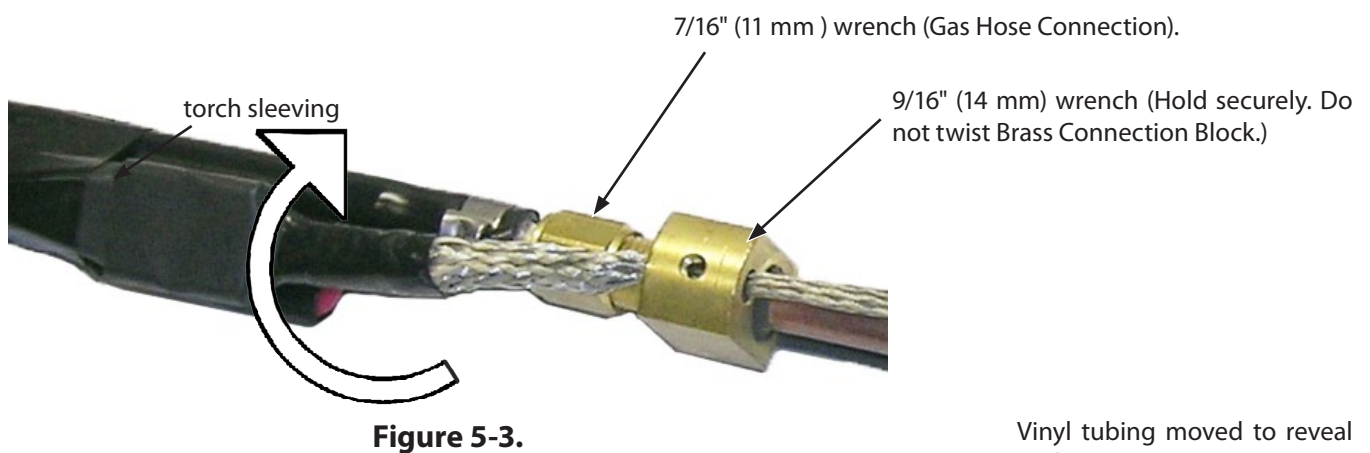


Figure 5-3.

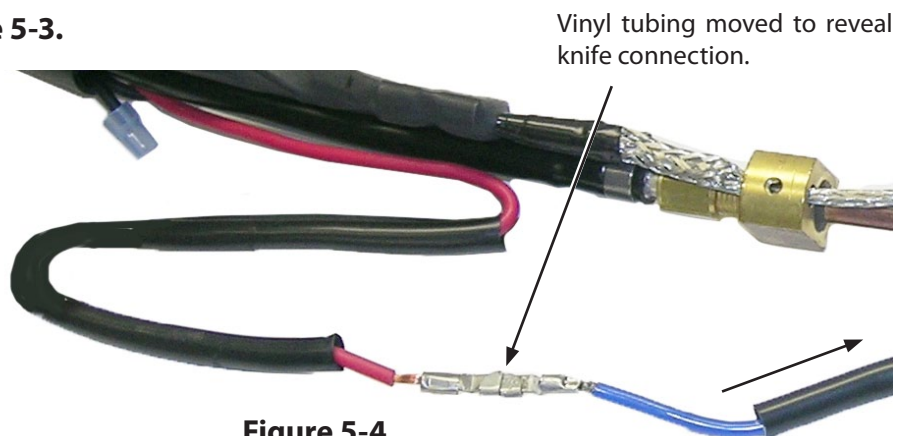


Figure 5-4.

4. To disconnect the main power cable, use a 1/16" (1.6 mm) Allen wrench to loosen setscrew in the brass connection block. Next, loosen setscrew on torch body connection with the Allen wrench

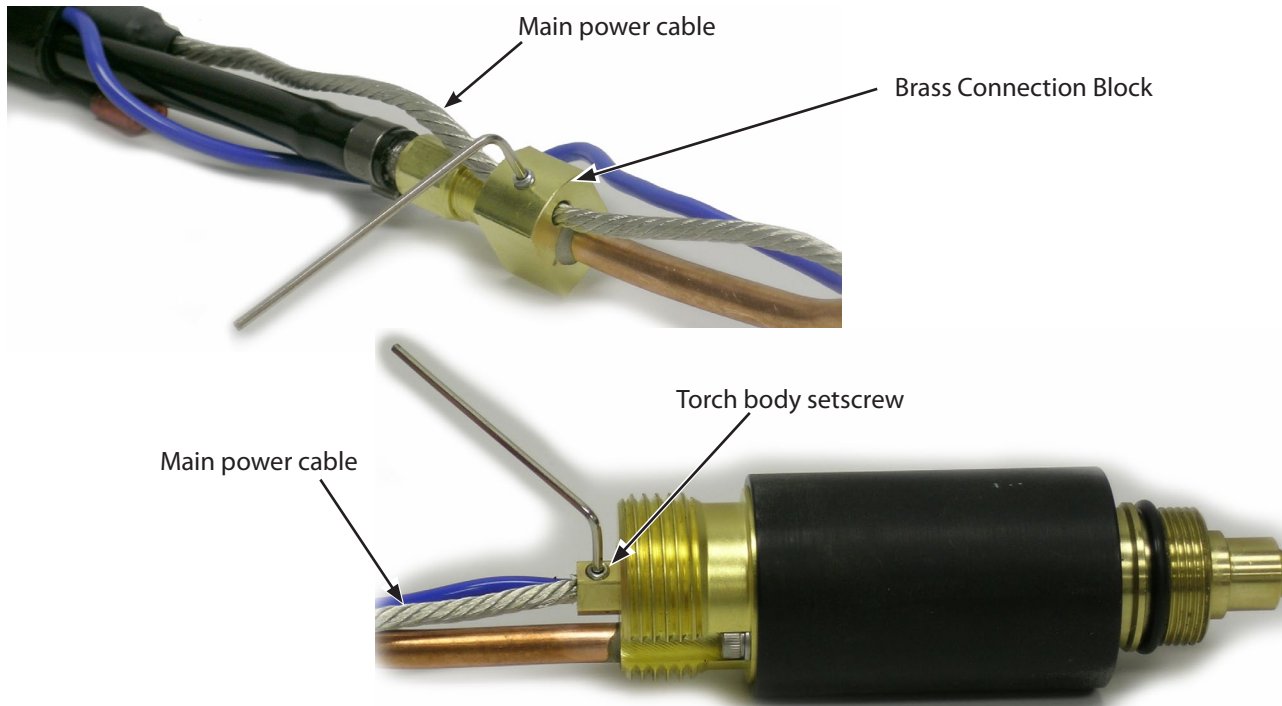


Figure 5-5.

(See figure 5-5).

5. With the main power cable, air hose and the pilot arc cable disconnected, replacement of the torch body assembly can be made by reconnecting a new torch body assembly in the reverse order. Be sure to reapply electrical tape around the torch sleeving and around the brass block connection.

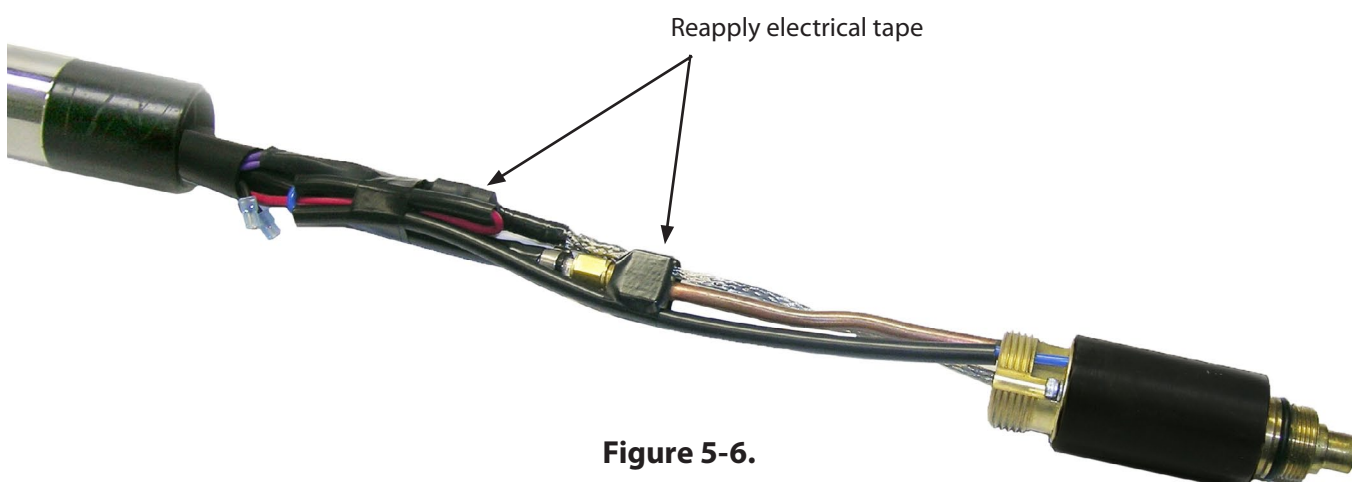


Figure 5-6.

5.4 Measuring Torch Gas Flows

If low gas flow is suspected of causing poor cutting performance or short consumable life, the flow can be checked by using the Plasma Torch Flow Measuring Kit. The kit includes a hand held rotameter (flowmeter) which will indicate the gas flow rate exiting the torch. The kit also includes a set of instructions which should be followed exactly to insure safe and accurate use of the rotameter.

Total air flow rate in the PT-37 should be 475 cfh (13.4 cmh) minimum with 100 amp consumables installed.



Flow Measuring Kit

6.0 Replacement Parts

6.1 General

Always provide the serial number of the unit on which the parts will be used. The serial number is stamped on the unit nameplate.

6.2 Ordering

To ensure proper operation, it is recommended that only genuine ESAB parts and products be used with this equipment. The use of non-ESAB parts may void your warranty.

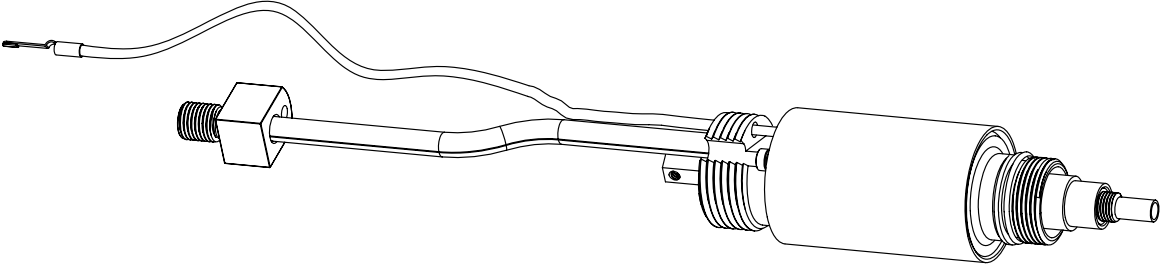
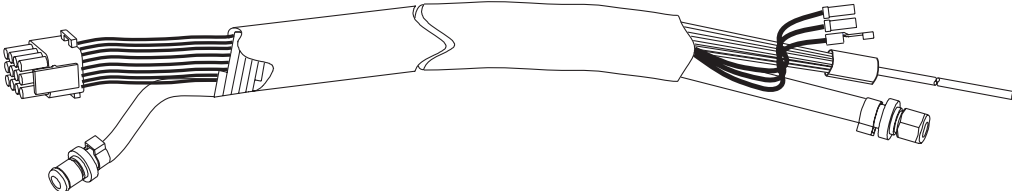
Replacement parts may be ordered from your ESAB Distributor.

Be sure to indicate any special shipping instructions when ordering replacement parts.

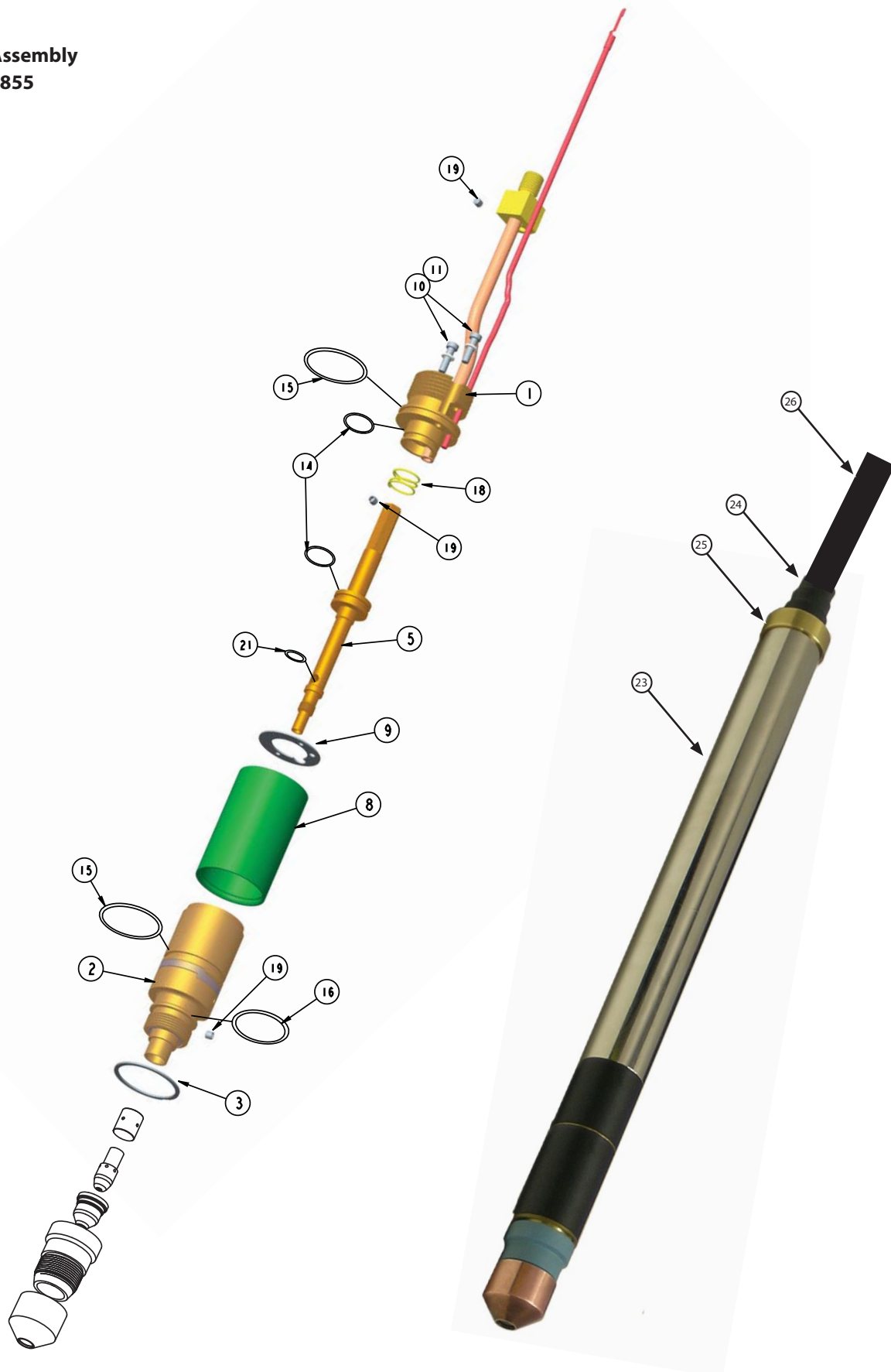
Refer to the Communications Guide located on the back page of this manual for a list of customer service phone numbers.

Note

Bill of material items that have blank part numbers are provided for customer information only.
Hardware items should be available through local sources.

	
PT-37 Torch Body Assembly	0558004855
	
Torch Cable PT-37 4.5' (1.4m)	0558004890
Torch Cable PT-37 17' (5.2m)	0558004891
Torch Cable PT-37 25' (7.6m)	0558004892
Torch Cable PT-37 50' (15.2m)	0558004893

Torch Body Assembly P/N 0558004855



SECTION 6

REPLACEMENT PARTS

Item	Part No	Qty	Description
(1-22)	0558004855		BODY ASSY TORCH PT-37
1	*	1	CAP / TUBE AY BRAZED UPPER PT-37
2	*	1	BODY LOWER
3	0558004856	1	RETAINING RING SPIRAL 1.298 OD
4			
5	(SEE KIT)	1	PISTON PT-37
6			
7			
8	0558004869	1	COLLAR RETAINING PT-37
9	0558004874	1	SEAL PILOT ARC LEAD PT-37
10	64302860	2	WASHER LOCK #6
11	61640852	2	SCREW SKT HEX SST #6-32 x .50
12	*	1.17'	WIRE, 5000V 105C, 16 AWG, BLU
13	*	1	SPLICE, KNIFE DISCONNECT 22-16 AWG
14	2223489	2	O-RING 0.590 ID x .070
15	181W89	2	O-RING 1.114 ID x .070
16	0558003694	1	O-RING 0.674 ID x .103
17	0558000443	AR	GREASE SILICON DOW DC-111 (1/4 oz)
18	0558006234	1	SPRING ELECTRODE CONTACT 100A
19	61330980	3	SCREW SET HEX CUP #6-32 X .13
20			
21	0558009426	1	O-RING 0.239 ID X .040
22	*	1.05'	TUBING PVC, 300V, #4 BLACK
23	0004470050	*	SLEEVE NO RACK (INCLUDES BOOT NUT - ITEM 25)
	0558003419	*	SLEEVE W/ RACK (INCLUDES BOOT NUT - ITEM 25)
24	0558007252	1	BOOT
25	0558007253	1	NUT BOOT
26	0558004890	*	CABLE AY TORCH 4.5 FT (1.4m) PT-37
	0558004891	*	CABLE AY TORCH 17 FT (5.2m) PT-37
	0558004892	*	CABLE AY TORCH 25 FT (7.6m) PT-37
	0558004893	*	CABLE AY TORCH 50 FT (15.2m) PT-37

**PT-37, Piston Replacement Kit,
P/N 0558004871
(consists of these items)**

Item	Part No	Qty	Description
5	0558004866	1	PISTON PT-37
9	0558004874	1	SEAL PILOT ARC LEAD
10	64302860	2	WASHER LOCK #6
11	61640852	2	SCREW SKT HEX SST #6-32 x .50
14	2223489	2	O-RING 0.590 ID x .070
15	181W89	1	O-RING 1.114 ID x .070
17	0558000443	1	GREASE SILICON DOW DC-111 (1/4 oz)
18	0558006234	1	SPRING ELECTRODE CONTACT 100A
19	61330980	1	SCREW SET HEX CUP #6-32 x .13
21	0558009426	1	O-RING 0.239 ID x .040
-	0004470049	1	ALLEN WRENCH - 7/64"
-	93750006	1	ALLEN WRENCH - 1/16"

NOTES

NOTES

NOTES

REVISION HISTORY

1. Original release for BETA use only: 04/2007.
2. Revision 05/2007 - released for publication.
3. Revision 06/2007 - reworked cut data charts.
4. Revision 10/2007 - Updated front end torch pics.
5. Revision 03/2008 - Updated torch pics on cut data charts, removed P/N 055804856 and changed P/N from: 0558004878 to: 0558005219 on 70A Carbon Steel data.
6. Revision 01/2009 - Updated front end consumables, added remote junction box references.
7. Revision 05/2009 - Updated for PC-900 release.
8. Revision 08/2009 - Added cut data and updated BOM/replacement parts per CN-093150.
9. Revision 10/2009 - Added additional console numbers (230V CE & 575V Bilingual) per John Magee inputs.
10. Revision 11/2010 - Removed "8" # from BOM.
11. Revision 03/2011 - Updated p/n's to 10 digit format per DNECO #113013.
12. Revision 05/2011 - Updated replacement parts BOM and illustration per DNECO # 113036.
13. Revision 02/2012 - Added note (30/40 amp galv steel data) per D. Griffin.
14. Revision 04/2012 - Added Arc Voltage note per D. Wiersema.
15. Revision 05/2012 - Changes to section 4.0 per D. Griffin.
16. Revision 08/2012 - updated BOM items 3 & 8 per D. Griffin.
17. Revision 11/2012 - Changes to kits and consumables per D. Griffin.

ESAB Welding & Cutting Products, Florence, SC
COMMUNICATION GUIDE - CUSTOMER SERVICES

- A. CUSTOMER SERVICE QUESTIONS:
Telephone: (800)362-7080 / Fax: (800) 634-7548
Order Entry Product Availability Pricing **Hours: 8:00 AM to 7:00 PM EST**
Order Information Returns
- B. ENGINEERING SERVICE:
Telephone: (843) 664-4416 / Fax: (800) 446-5693
Warranty Returns Authorized Repair Stations Welding Equipment Troubleshooting **Hours: 7:30 AM to 5:00 PM EST**
- C. TECHNICAL SERVICE:
Telephone: (800) ESAB-123/ Fax: (843) 664-4452
Part Numbers Technical Applications Specifications **Hours: 8:00 AM to 5:00 PM EST**
Equipment Recommendations
- D. LITERATURE REQUESTS:
Telephone: (843) 664-5562 / Fax: (843) 664-5548
Hours: 7:30 AM to 4:00 PM EST
- E. WELDING EQUIPMENT REPAIRS:
Telephone: (843) 664-4487 / Fax: (843) 664-5557
Repair Estimates Repair Status **Hours: 7:30 AM to 3:30 PM EST**
- F. WELDING EQUIPMENT TRAINING
Telephone: (843)664-4428 / Fax: (843) 679-5864
Training School Information and Registrations **Hours: 7:30 AM to 4:00 PM EST**
- G. WELDING PROCESS ASSISTANCE:
Telephone: (800) ESAB-123
Hours: 7:30 AM to 4:00 PM EST
- H. TECHNICAL ASST. CONSUMABLES:
Telephone : (800) 933-7070
Hours: 7:30 AM to 5:00 PM EST

IF YOU DO NOT KNOW WHOM TO CALL

Telephone: (800) ESAB-123
Fax: (843) 664-4462
Hours: 7:30 AM to 5:00 PM EST

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